

Final Degree Project  
**Bachelor's Degree in Industrial Technology Engineering**

# **Business Analysis of a Culinary Innovation Project**

**REPORT**

**Author:**  
**Directors:**  
**Summon:**

Alicia Bosch Canals  
Pere Grima Cintas  
Diego Díaz López  
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d'Enginyeria Industrial de Barcelona





## Review

The target of this Final Degree Project (FDP) is to show the work I developed as an intern in Telefónica I+D (TID). During four months, I worked within the Product Innovation and Research department where I was part of a culinary innovation project. This project has been carried out in collaboration with Ferran Adrià and elbulliFoundation.

The culinary industry has a constant need to improve and change. Chefs, culinary schools, foodies, etc. aim to create unique and appealing dishes. Thus, this is hand in hand with innovation and, therefore, with TID. This project (from now on Foodly) aims to solve the problem that all the culinary industry face: the need of being creative and innovative when cooking.

Foodly consists in the creation of a digital and paid service, a website and mobile app, that allows chefs to get sound inspiration using Big Data analysis. Its database uses chefs' knowledge and chemical compounds. **Its main objective is the creation of new innovative and creative recipes.** Big Data analysis and knowledge have combined to reveal the perfect dish. Cooking is a complex world and Foodly aims to involve anyone who wants easier than ever before. It is the answer to all food lovers. All of us can become innovative and original chefs with just a click.

To carry out this FDP, it has been considered necessary to explain the beginnings of TID into the culinary world and its on-going collaboration with Ferran Adrià during the past years. Also, Foodly's technology has been briefly described.

However, **this FDP is mainly focused on the business part** because that was my assigned task at TID. For instance, competitors and target users have been analysed. Also, the pricing models, market size and business models have been studied throughout the project. Finally, it has been really important to thoroughly study the costumers using part of the Lean Startup methodology "Customer Development".

Many conclusions have been made. To begin with, it is going to be an under-subscription paid application, where you will pay depending on the use you made out of it. However, there will be a functional part for free. Also, foodies, chefs and culinary schools are going to be our main target users. When examining the competitors, it has been considered what should not be applied to Foodly and what should be. Moreover, when analyzing the market size, **it has been demonstrated how this project is highly profitable and a global opportunity.**





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# **1. Preface**

## **1.1. Motivation**

I decided to develop this project during my stay as an intern at Telefónica I+D (TID). TID is focused on new technologies and applies it in different fields, in this case the culinary one. It clearly motivated me to work in such an interesting environment and to be in constant contact with Ferran Adrià.

Thus, given the opportunity I had, I thought it could be challenging to use my work at TID as my Final Degree Project.

Moreover, I decided to write it in English because it implied a higher stimulus to me. Though it also implied a higher difficulty, it really encouraged me to develop this project.

## **1.2. How it is focused**

It may seem that this project is less technical than it could have been expected because it is primarily related to management. However, thanks to my engineering background I have been able to develop this project. Subjects like “Economía”, “Organización y Gestión”, “Proyecto I”, “Proyecto II”, “Estadística”, “Técnicas estadísticas” and “Gestión de Proyectos” have been really useful throughout the FDP.

As an intern at Telefónica, I invested most of my time as a support in this culinary project and I developed mainly the business part. Moreover, I was in charge of thoroughly analysing the costumers, in order to know exactly if our service responded to all their needs.

However, the project background is going to be clarified. This way, it is easier to understand how they came with the idea of the project. The project technology is also going to be explained, but mostly superficially because of confidential affairs.



## 2. Introduction

### 2.1. Project target

This Final Degree Project (FDP) shows the business analysis of a culinary innovation project. That implies that the main project, which is going to be called Foodly, includes the business part among others. Foodly has been developed by Telefónica I+D (TID) in collaboration with Ferran Adrià and elBulliFoundation in order **to stir up the innovation process in the culinary field.**

During my stay at Telefónica, I developed the business tasks, which is thoroughly explained throughout this document. Due to the fact that this FDP is part of Foodly, it shares its general goals.

In the Foodly project, there are some **general** objectives:

1. Its main target is to create a digital service, an application which in this project is going to be called Foodly (which is not the real name due to confidential matters). This project solves the problem that both chefs and foodies face: the need of being innovative and creative when cooking.
2. Apply Open Innovation and Lean Startup to develop this project.
3. Work with Big Data within the kitchen and food industry.

However, as mentioned, this FDP is about the business analysis of Foodly. Thus, it has some **specific** goals, which are more focused on the commercial part:

1. Analyse whom should this project be addressed to. That is, determine who are our targets users.
2. Consider all our competitors and contrast our strengths and weaknesses with theirs.
3. Create a business model, considering expertise degrees.
4. Design a suitable and logical pricing model.
5. Thoroughly study what the market size would be depending on the target users.
6. Last but not least, apply the “Customer Development” Lean Startup concept to deeply research about our customers. This way, thanks to these it is going to be possible to

discover what the potential customer really want to have in the service we want to solve them.

## 2.2. Project scope

This project explains the way Foodly was developed, focusing on the business part, and how TID came up with this idea.

It briefly explains how TID arranged many culinary meetings and projects. They developed Bullipedia, they organised the GastroTech days and created HackingBullipedia. Thanks to all these initiatives, they created a path that led to Foodly, which perfectly fulfilled chefs and foodies' need to innovate.

It succinctly explains its technology and tries to solve the challenges that cooking displays by using a foodbridging technology. This technology is based on networks of networks, which works like the brain does.

Moreover, it insists on many management solutions that should be carried out before launching a product. That is, analysing the competitors, setting some business models and calculating the market size to see whether it is profitable or not. Also, it studies the potential customers by using the "Customer Development" Lean Startup methodology.

In sum, this project explains commercial tasks that were developed in order to get to know better our target customers and improve Foodly. Also, it briefly explains its technology and background.

It is important to emphasise that due to confidential affairs, a lot of information has not been able to be revealed such as the real name of the application, the app features, which includes the explanation of its technology and budget issues. However, I have tried to describe it superficially in order to get a general idea.

### 3. The project background

It is important to know how Telefónica began to apply the new technologies into the culinary field to understand the whole project. Thus, the project background is going to be briefly explained in order to ease the understanding of the final solution.

Therefore, it is important to know that Telefónica has been collaborating with Ferran Adrià for four years. Both of them were aware that the process of applying new technologies into cooking was going to be slow and long.

They wanted to approach consumers into a culinary world where innovation could be achieved. However, by using different strategies like Open Innovation and the Lean Startup Methodology they were able to find the solution: the Foodly project.

Hence, to begin with, they applied the Open Innovation way of thinking. Henry Chesbrough first coined the term Open Innovation in 2003. It is a new inspiring strategy where firms uncover opportunities for pure innovation. To do so, enterprises go beyond their internal boundaries and cooperate with external professionals. That is, it is how companies can successfully access external sources or innovation and likewise effectively commercialise their innovation capabilities, resources and outcomes.

Telefónica (from now on TEF) has a department that actually looks at trends and how technology is supposed to develop in the future. All these trends insights drive most of the innovation projects and, thus, their Open Innovation programme.

TEF has been thoroughly engaged with Open Innovation. They acknowledged how it requires flexibility to deal with the challenges arising from cooperating with companies who have a different way of working and different way to approach innovation. Thus, in its effort to empower this commitment, TEF began to look for opportunities in different backgrounds and areas, where cooking appeared to be an outstanding opportunity in the creativity arena.

Given the emergent openings that elBulli and elBulliFoundation could offer precisely in the cooking industry, Telefónica was able to find a source of inspiration. Therefore, taking advantage of Ferran Adrià and TEF's partnership, a new Open Innovation project began.

### 3.1. Telefónica R&D and Ferran Adrià, an Open Innovation partnership

elBulliFoundation was created when elBulli, awarded as the best restaurant in the world many years in a row, closed down. After more than two decades of applying a set of principles and methods to gastronomy, Adrià stopped because he could no longer innovate to the level he wished.

Therefore, he founded elBulliFoundation with two goals:

1. Save guard the legacy of elBulli restaurant which included the restaurant itself and the documentation generated during its lifetime
2. To craft a creative archive organizing and classifying the knowledge of modern cuisine: BulliPedia

This second goal just mentioned above, seemed to fit perfectly with TEF's purpose of entering deeply in their Opening Innovation programme. Hence, they started working with elBulliFoundation in Nov 2011.

However, in order to avoid cultural and language misunderstandings, elBulliFoundation CTO, David López, collaborated as an expert in the residence at TEF R&D. Thus, he got to know better how TEF R&D worked and was able to get in contact with its culture and language. CTO remained and expert for residence for one whole year. Thanks to this, CTO taught TEF its language and approach to innovation of TOP cuisine.

Three months from that, TEF R&D actually started the true collaboration with Ferran Adrià. He set around 6-7 challenges that TEF agreed to solve. TEF proposed an innovation call to face these challenges and efficiently achieved a solution. These activities are in the loop of the continuous collaboration of both organizations.

In 2014, Telefónica developed Telefonica Digital Food Lab to be able to face all these challenges.

### 3.2. elBulliFoundation

elBulliFoundation is a family private foundation, encouraged by Juli Soler and Ferran Adrià. It was founded on Feb 7<sup>th</sup> 2013 due to elBulli transformational need. It had a future view based both on the will of promoting innovation and creativity by the cuisine language and on the will of yielding society a legacy.



It is defined by three different projects, which are highly related: elBulli1846, elBulliDNA y Bullipedia.

### **3.2.1. elBulli1846**

elBulli1846 is a journey through history to understand the nouvelle cuisine. It is an exposition that shows how a simple restaurant became a gastronomical world leader.

Its size expands to nearly 5,000 square meters, with a total area of 15,000 square meters. elBulli1846 is focused as a route through creativity and innovation, using the kitchen as a language, through the evolution of elBulli. All of it is contextualized in what cooking is and what the origin of cooking was.

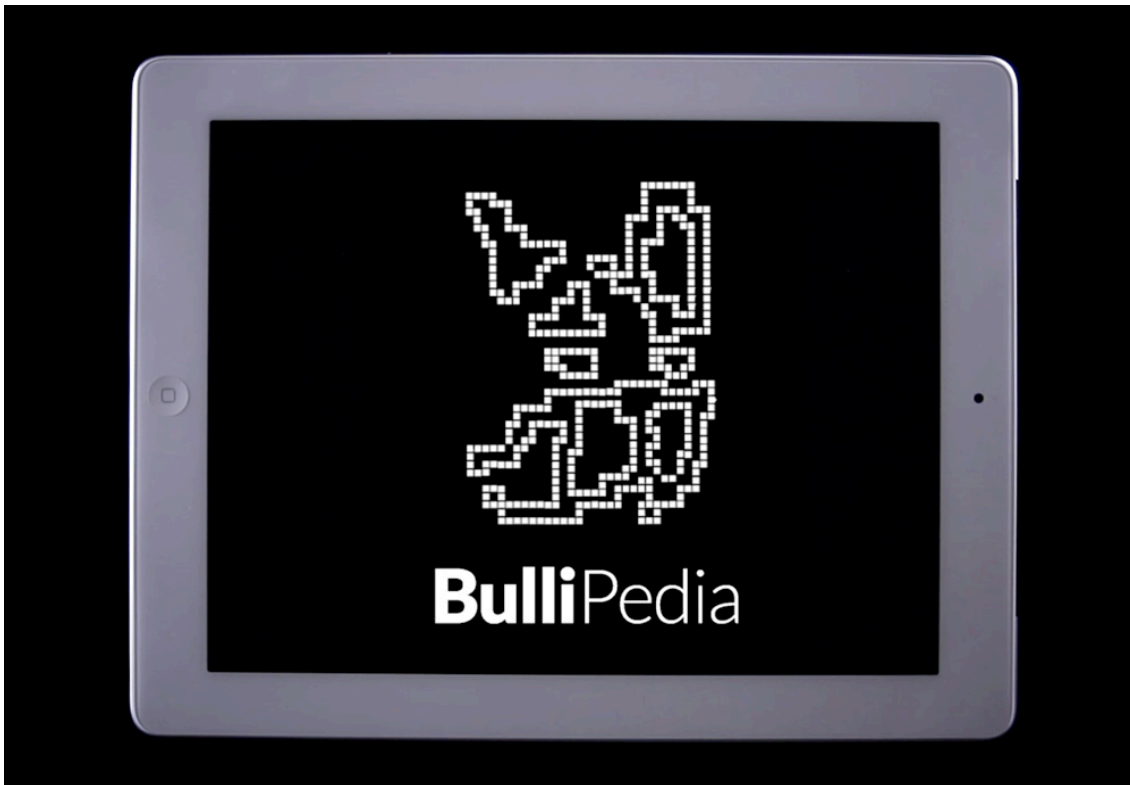
### **3.2.2. elBulliDNA**

It is the exhaustive analysis of a gastronomical process. It is a creative center inside elBulli1846 space, which will order all its creativity through the Gastronomic Decoding Process.

In order not to fall into the routine, we expect 30 people working on elBulliDNA. They will be subject of possible changing schedules and calendars. Moreover, even the headquarters may be located elsewhere in a future. The fruit of elBulliDNA team work is published daily via the Internet.

### **3.2.3. Bullipedia**

Bullipedia is the most complete and structured gastronomical creative file in the history of western gastronomy. It wants to be an organizing knowledge model and the information device of cooking. It is a powerful tool that will help to get information in an organized way, quickly and reliably, accumulate knowledge and help to create. The "intellectual" software will be developed in the Bullipedia Lab.



*Image 3.1 Bullipedia Logo. Source: Official webpage*

### 3.3. GastroTech Days



*Image 3.2 GastroTechDays Logo. Source: Telefónica R&D*

GastroTechDays is a Gastronomy and Technology focused meeting that took place in 2011 during two days. It was organised by Telefónica R&D and elBullifoundation in Telefónica's headquarter in Barcelona. The event was soon highly popular and it speedily embraced 200 people, the maximum admitted.

The celebrity Ferran Adrià and Pablo Rodríguez, product innovation and research director in Telefónica R&D, hosted the encounter. It aimed to encourage the commitment in the development and progress of technology within gastronomy. He boosted the attendees to be the pioneers and the promoters of the nouvelle cuisine.

This event was able to be developed thanks to the support of:

- Telefónica R&D, the event organiser
- Guia Repsol, who promoted most of the activities
- Estrella Damm, that hosted the main supper
- CETT, the hotel management school, that since the beginning took over the project and provided all the needed facilities

GastroTechDays lasted two days, as mentioned. On day one the main topic was "**Blog forfood**" which was dedicated to the emergent tendencies around blogs, recommendations,

social media and digital journalism as a gastronomical universe. This conference was organised by bloggers such as Jorge Guitián, the *Diario del Gourmet de Provincias* blog responsible, and TxaberAllué, known by its videoblog [El Cocinero Fiel](#). It consisted of two roundtables where the social networks interactions were discussed.

“**Thoughtforfood**” was the core of the second and last session. It was co-organised by Pablo Rodríguez and BalachanderKrishnamurthy, from AT&T. It gathered 13 technology experts that exposed their gastronomy world vision.



Video 3.1 *GastroTech Days welcome talk Video*. Source:  
<https://www.youtube.com/watch?v=gCRMv90QEKs>

All GastroTechDays video sessions can be found [here](#).

### 3.4. elBulli 10Fridays

The [10Fridays](#) (click to watch video) programme offers the chance to a number of people in all TID to work on their ideas during 20% of their time. That is, 1 day per week during 10 weeks. The team must have a maximum of 3 members, ideally one or two. This way, it increases the number of ideas every round. Up to 20 people can participate in each round and if more than 20 people apply, the proposals are selected by lottery.

A call for innovation was made within Telefónica, which is called 10Fridays, which was exclusively dedicated to elBulli. For this programme, employees can propose any idea of their own harvest that targets one of the challenges set forth by the open innovation partners. It enables out of the box new ideas.

The challenges were around the infrastructures to be deployed in such an innovative and creative-devoted space:

1. What cloud services should be in-place
2. How to link communications among different buildings and locations.
3. What M2M or IoT technologies will enhance the space expression.
4. How to build the most innovative brainstorming meeting room.
5. And what the requirements are to build the reference platform to capture and share information.



Video 3.2 10Fridays explanation. Source: [https://www.youtube.com/watch?v=YOvVkJDzrV\\_A](https://www.youtube.com/watch?v=YOvVkJDzrV_A)

The employees displayed different ideas and the best six proposals were selected. The chosen ideas were left more time so they could be further developed. They made a ranking of the best ones and the best two matured proposals were given the funding to make the prototype. This projects followed lean startup methodologies.

### 3.5. Bullipedia prototype at Wired



Image 3.3 10Fridays explanation. Source: <http://www.honolululab.com/telefonica-commercial-bullipedia>

A prototype was made showing two spaces with the same goal, innovation:

- Creativity Today, which was daily information about the creative work of 30 people at elBulliFoundation and latest news of creative trends worldwide
- Creative Archive, where you learn with precision and gather knowledge. It is the most inspirational part of the prototype

It focused on teaching and learning. Moreover, it had a search engine, properly distributed and highly efficient, which lead way to arise new ideas.

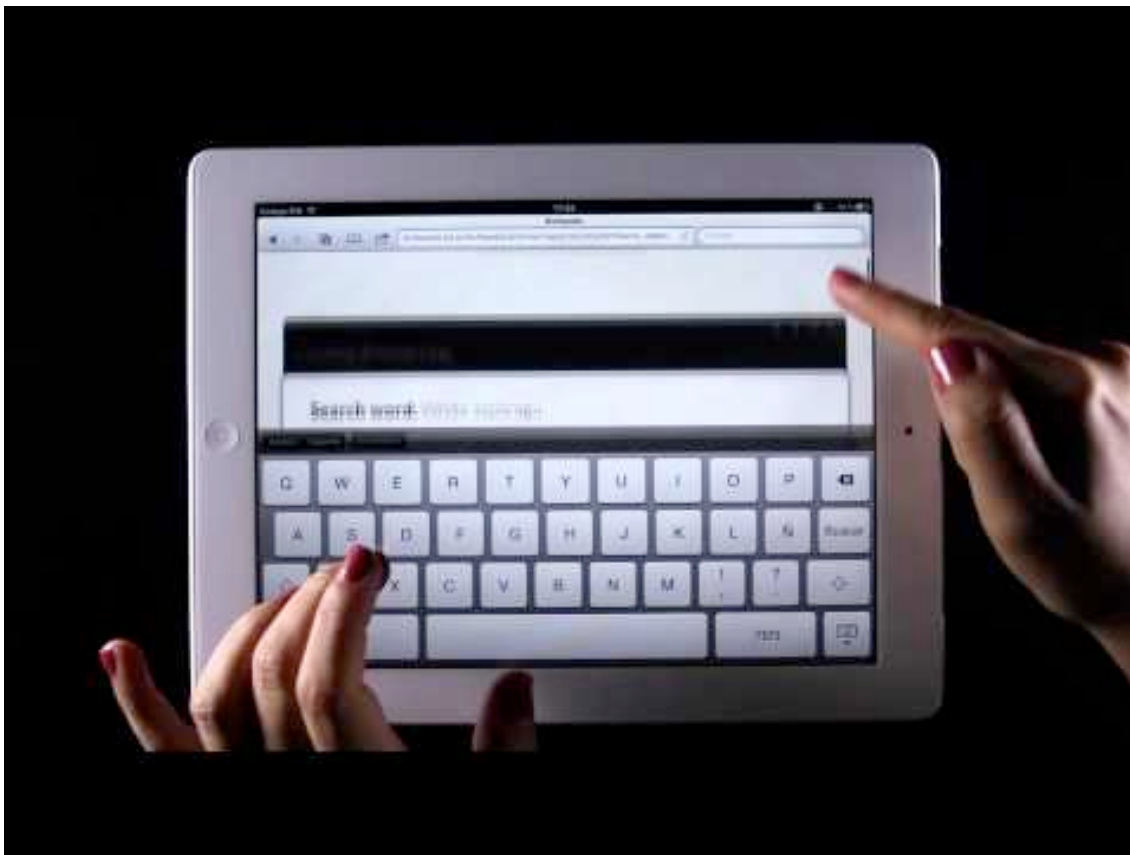
In summary, this tool prototype could be applied in different ways:

- Creativity tool, to explore options in the creation of recipes in its conceptual phase
- Educative tool, to explore taxonomies and classifications
- Operational tool, to create products conceptual maps

Soon after this prototype was released, Bullipedia was featured in a Wired event in London as well as in one of Wired's magazines at the end of 2012. Wired magazine showed the vision of what elBulliFoundation could become and explained some of the features of the Bullipedia prototype.



The Bullipedia prototype video can be watched below:



*Video 3.3 Video explaining the Bullipedia. Source: Bullipedia Official Webpage*

To learn more, you can click on the Wired Online [article](#)

### **3.6. Exhibition prototypes**

It was decided to create an application where the main ingredients networks from elBulli and their use could be found gathered together. The core ingredients of each recipe were also displayed.

Its way of working is intuitive and its visualisation appealing. It shows a network of elBulli most frequent ingredients, presented as circles, bigger or smaller depending on its relevance. By watching the graph connections, you can easily discover which ingredients combine most frequently. Depending on the thickness of the edge between two ingredients, you get information about how many recipes have been created with this combination.

You can also find all of elBulli's recipes that can be filtered by the ingredients you wish.



Image 3.4 Exhibition prototype. Source: TID



Image 3.5 This demo can be found in 15<sup>th</sup> floor of Telefónica I+D's headquarter in Barcelona.



From this point, they began to see new possibilities that could arise by applying big data with all the information gathered with elBulli. Even though it was an internal project, they were aware of the importance of appealing external sources, which could help them a lot. It was the perfect time to take into account open innovation. And they did so by announcing HackingBullipedia.

### 3.7. HackingBullipedia



Image 3.6 HackingBullipedia Logo. Source: [www.hackingbullipedia.org](http://www.hackingbullipedia.org)

[HackingBullipedia](http://HackingBullipedia) is a global call for ideas to all universities in the world. It is open to everyone who wants to participate. Its goal is to enrich the Bullipedia project with fresh new ideas based on high technological solutions. It focuses on using internet to create the Bullipedia.

When Bullipedia was shown to the world, a conversation stroked up among different scientist and technologists from all around the world. Telefónica realised that much more could be done once all the data from the Bullipedia was available. Thus, in order to do so, HackingBullipedia was created by the fall of 2013.

On September 9<sup>th</sup>, a kickoff videoconference took place where Pablo Rodríguez and Ferran

Adrià, as well as the HackingBullipedia Contest team, answered all the questions related to the challenge. The proposals had to be delivered at the end of October and on Nov 7<sup>th</sup>, the three finalist were announced. On Nov 27<sup>th</sup>, the Demo Day was held and the two final winners were displayed.

Among all the projects presented, twelve were selected as finalists. The jury had huge struggles to choose the best ones but, at the end, two of them were chosen as winners, the HUEVO Team and the KEMLg Team. The price to each of them is that one member of the winning team will enjoy a three-month remunerated internship working to advance their proposal into reality with elBulliFoundation and Telefónica I+D teams in Barcelona. Telefónica I+D will provide a work space in its location, equipment as well as access to technological knowledge and Telefonica's technology platform.

The winners' proposals were:

### **3.7.1. HUEVO Team**

It is gastronomy programming language allows a computational culinary language. It translates traditional recipes into machine understandable language that can be actionable by either a device or a data mining software so that you can find patterning, it is a forefront idea. Therefore, Bullipedia is used as a code repository. The designers are Pilar Fernandez Hermosilla and Francisco González-Blanch.

Click [here](#) to watch its presentation video.

### **3.7.2. KEMLg Team (Genesis)**

Genesis is an intelligent system specifically designed to help the creative team to follow how creativity takes place in Bullipedia. The team comes from the Polytechnic University of Catalonia and it is integrated by Karina Gibert, Javier Vázquez, Beatriz Sevilla, Sergio Álvarez, Arturo Tejeda, Luis Oliva, and Ignasi Gómez-Sebastià.

Click [here](#) to watch its presentation video.

## 4. The project business and technology development

After everything mentioned above, Telefónica decided to take a definitive step. They came up with the idea of creating an application mainly aimed at innovating in the kitchen. They had researched a lot and had a cleared a path to develop this idea. They decided to call this project Foodly.

They saw the opportunity of creating a **digital tool for culinary creation**. So, what is Foodly? It is not either a tool for daily use or a reason to believe, it is **a support source**. It focuses on creativity and discovery and allows chefs to get sound inspiration based on knowledge and Big Data analysis. Its base relays on chefs, countries and flavour chemical compounds and is addressed to new recipes creation.

It is **a gastronomy and technology combination output**. Since TEF began to explore this arena, many events were made and many plans were arranged, but the summit was reached with Foodly.

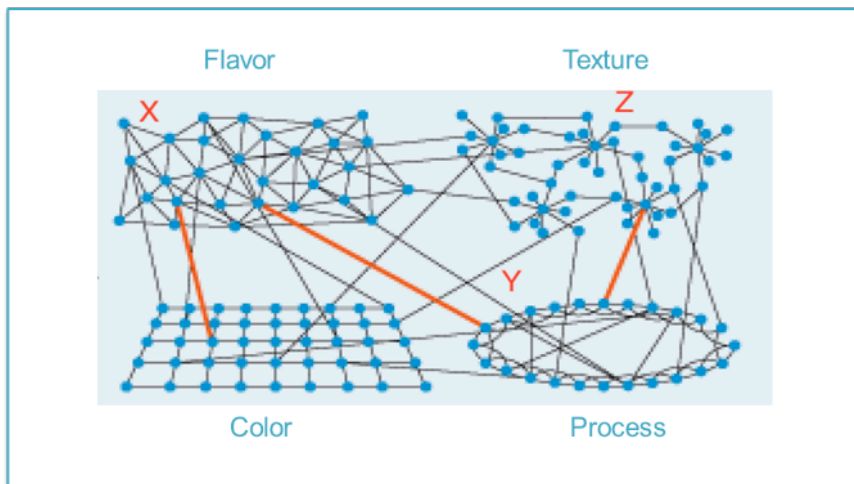
*The technology is going to be explained superficially because the following pages are going to be centred upon the business issues.*

*The following chapters (from chapter 4.2 included) are going to be about the business development.*

### 4.1. Technology

Even though I only developed the business part, it is important to briefly explain its technology, which was developed by the Research Team.

#### 4.1.1. Networking to networking



*Image 4.1 Networking to networking explanation. Source: TID*

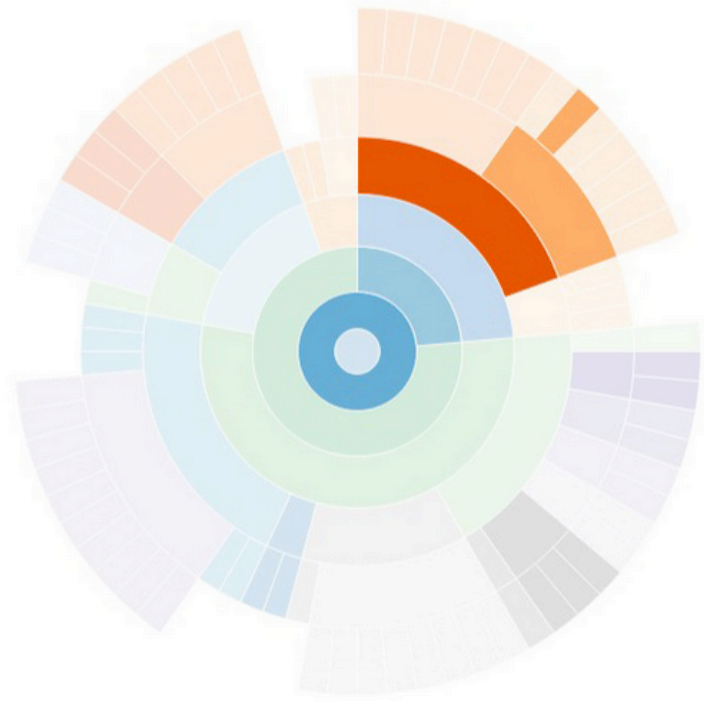
Researchers at Telefonica I+D lab area applying simplex complex systems to such unconnected disciplines as football and cuisine.

Telefónica has developed a multiplex cuisine network. The hidden magic behind relays in an algebraic topological method for multimodal networks comparisons. It works in a similar way as the brain does, “this technology works by allowing different operations between networks that share the same set of nodes, by embedding them in a common metric space, enforcing transitivity to the graph topology”. The technology is based in simplex complex systems, which encodes knowledge in network.

Foodly is the prototype built on this technology. It is planned to combine all the possible obtained data about Gastronomy into a Network of Networks framework. This is going to be possible thanks to TEF’s collaboration with Wageningen University.

It uses bridges to pair ingredients: two ingredients with other ingredients. They take into account volatile sensation, texture, colour, taste, flavour and cooking process.

#### 4.1.2. Taxomap



*Image 4.2 A Taxomap example. Source: TID*

It also uses TAXOMAP, which is an application to show the potential of the digital contribution to the classification of gastronomy content. It is a creativity and inspirational tool that allows discovering relationships among the atoms of Gastronomy. In other words, it is an educational tool to learn about Gastronomy.

It is a way of applying new technologies to ease the knowledge organization work within gastronomy. It is being applied to products, but is similar to other classifications.

Taxomap builds concept maps to educate and innovate, to facilitate gastronomy classifications spread. It is a tool for creating concept maps about the knowledge of non-elaborated gastronomy products.

So, what can a Taxomap do? It can provide faceted navigation, visualization and information organization. That is, you can filter elements and carry out searches. It can filter elements and look over the made searches.

There are different ideas of how the Taxomap could be visualised.



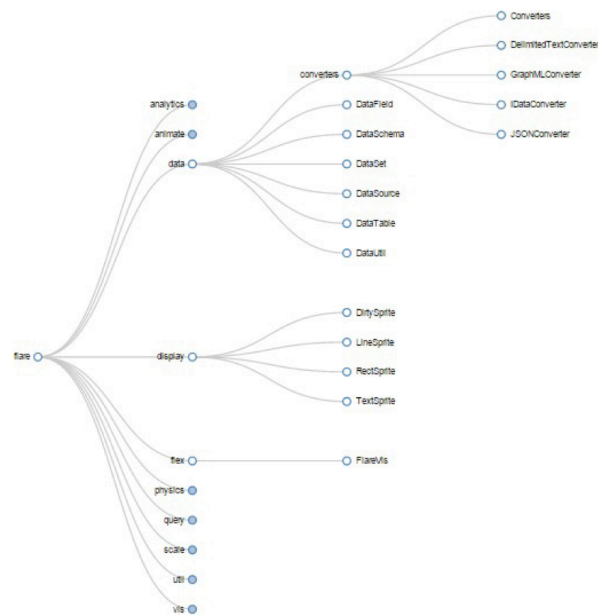


Image 4.5 Taxomap 3. Source: TID

As you click on the different circles it keeps unfolding. Good ideas could be taken out from here.

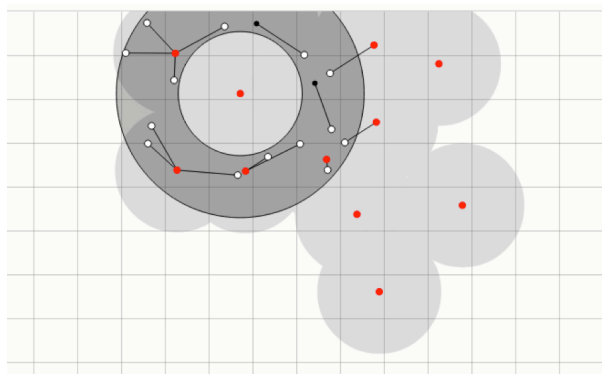


Image 4.6 Taxomap 4. Source: TID

This drawing represents pretty well the links between different types of elements though it may be confusing.

In sum, as you can see there are many different ideas to represent the ingredients by using this technology.

## 4.2. Target users

To create awareness of the tool and potential demand, target users must be studied.

The different target users are:

<b><i>R&amp;D departments of some top-notch restaurants</i></b>	Only in Spain we have more than 40K mid-range restaurants
<b><i>Chef schools</i></b>	More than 1000 cooking schools globally
<b><i>Gastronomy schools</i></b>	Learn with our tool Keep using the tool once they graduate
<b><i>Dietetic tool</i></b>	People are more aware of their diet and nutrition needs  i.e., how to modify recipes, so that they are the closest to the original, but with all the dietary restrictions of a specific person  Differentiation from other food web pages
<b><i>On line ingredient shop</i></b>	Easier access to unusual ingredients  Connect chefs with providers and producers  Guarantee a good and steady quality  Enables local and seasonal purchase
<b><i>Chef</i></b>	
<b><i>Foodies</i></b>	

*Table 4.1: Target users. Source: Made by myself*

*Who are foodies [1] and where does this phenomenon come from?*

Foodies are people who do not mind expending considerable quantities of money on food.

More than 65% of foodies dine in restaurants once a week, and 22% eat out three times a week, compared to non-foodies who eat out once a week (46%), and three times a week (13%).

In fact, foodies (35%) would wait one month for a reservation at a special restaurant, compared to non-foodies (12.5%). Also, 27.8% would drive 50 miles to visit a particular restaurant, 10% of those who defined themselves, as “foodies” would travel 100 miles.



In the US, 14% of their population consider themselves as foodies. It may sound as a low average, but if you take into account that there are around 320 million people living there, there are around **45 million foodies living in the US**.

Millennials are changing the entire culinary landscape. Thus, 50% of Millennials now refer to themselves as foodies. Millennials are the demographic group following Generation X. There are no precise dates when the generation starts and ends. Most researchers and commentators use birth years ranging from the early 1980s to the early 2000s. [2]

### 4.3. Competition analysis

To begin with, Foodly is known to be a step forward from competitors.

It had many added values. The research team that developed this project had:

1. The knowledge, thanks to 4 years of work with Ferran Adrià and ElBulliFoundation. Thus, it has first-hand interaction with the most creative chef in history. This means that we all have been able to:
  - Learnt Ferran Adrià's challenges
  - Learnt his way of understanding innovation and creativity
  - Co-created several digital tools for searching and browsing ingredients (bullipedia, for example)
2. A differential foodbridging technology developed by the Research team. This make have differential technology from all our competitors:
  - Based on Data mining of recipes and analysis of chemical compounds. Our data driven network approach is different from any of our competitors' and our access to the "normalized" elBulli data helps us in our more accurate results
  - Based on networks of networks
3. Access to top chefs and gastronomy schools
4. On-going collaboration with the top second Food and Technology university in the world: Wageningen University

However, even though Foodly seems to be much more advanced than any of the technologies of our competitors, it is very important to analyse them. Why? To learn its pros and cons and therefore applying their pros and avoiding their cons.



#### 4.3.1. Chef Watson

Chef Watson is an IBM and Bon Appétit partnership [3]. It has combined its technology with knowledge of flavour compounds, food pairing theories and human taste preferences, reorganising and redesigning the data to generate unique combinations of ingredient pairings. It is indeed similar to Foodly. However, right now it has not a pricing model, though they say it was going to become lucrative.

API	Features	Pricing Model	Technology
Yes <sup>1</sup>	Really simple and intuitive to use. You can include and exclude ingredients. Also, you can choose the type of dish and select its style (Spanish, Peruvian, Thai...). It can share and save ideas	Unknown, maybe they get paid by <i>bon appétit</i> web publicity	They analysed the content of more than 9,000 <i>Bon Foodly</i> recipes: How ingredients are used in different dishes and common pairings to see if ingredients matched.  It can explore many flavour combinations <sup>1</sup>

Table 4.2: Chef Watson features. Source: Made by myself

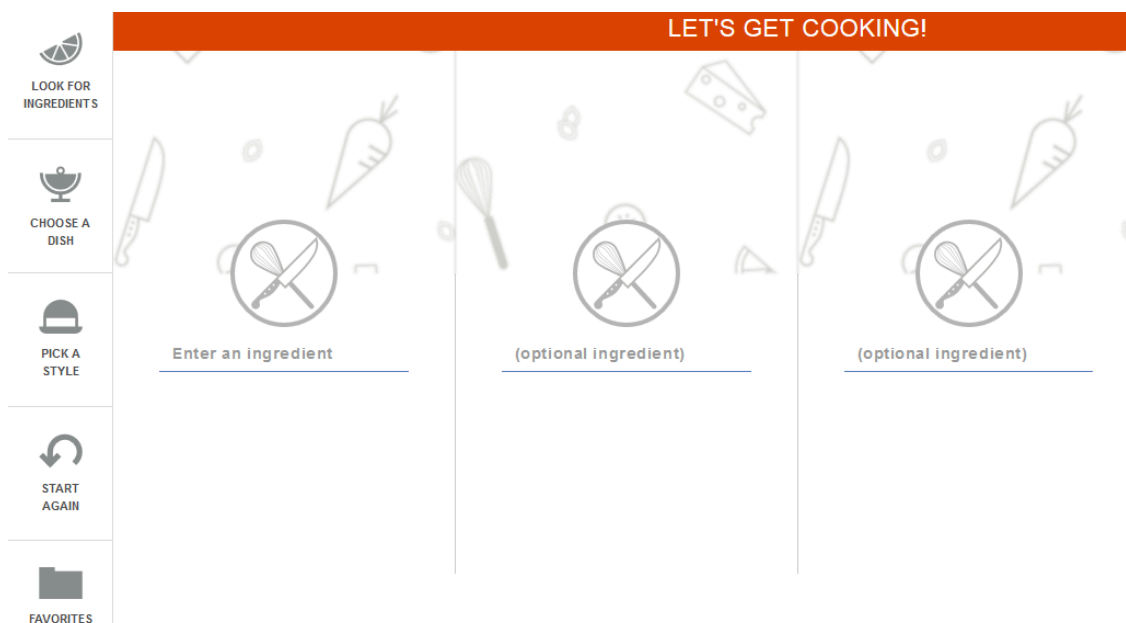


Image 4.7 Chef Watson webpage. Source: <https://www.ibmchefwatson.com/app/>



### 4.3.2. Foodpairing®

Foodpairing® is a site that bases its technology in a scientific method to identify which foods & drinks go well together. To understand why ingredients match it's important to know how humans perceive flavour. [4] Its API can be found here <http://developer.foodpairing.com/>

API	Features	Pricing Model	Technology
Yes	<ul style="list-style-type: none"> <li>- It takes into account three dimensions.               <ol style="list-style-type: none"> <li>1. <b>Aroma:</b> Aroma determines about 80% of our flavour perception. When different foods share certain key aromas they are more likely to pair well in a recipe</li> <li>2. <b>Taste</b></li> <li>3. <b>Texture</b></li> </ol> </li> <li>- It has a seasonal filter</li> </ul>	Works under subscription	The Foodpairing® team uses scientific techniques such as data analysis and machine learning to create algorithms calculating how well foods & drinks match

Table 4.3: Food Pairing Main Features. Source: made by myself

Its site uses a graphic way to show how ingredients combine (See Image 4.8):

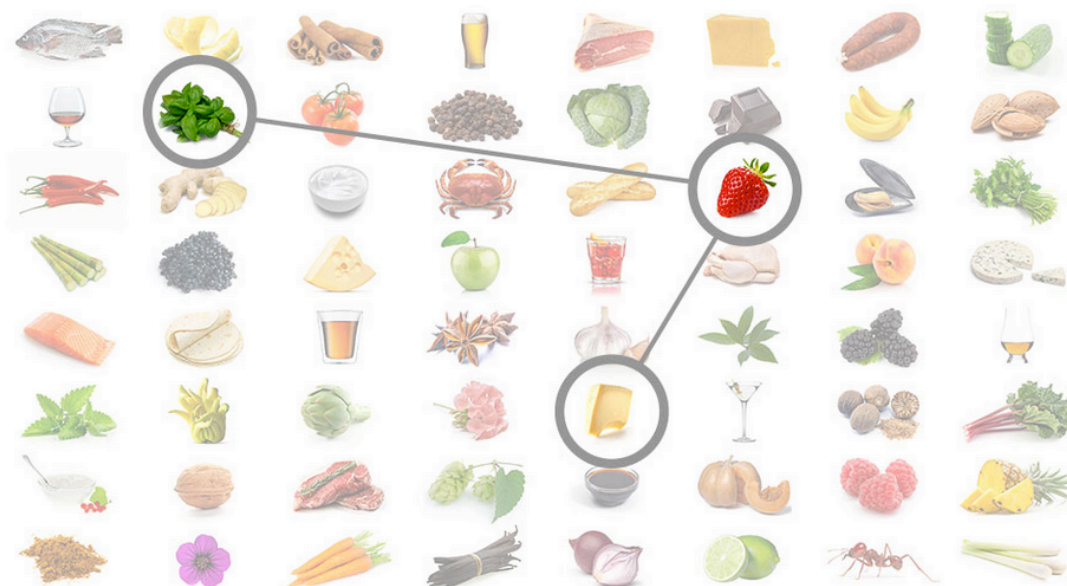


Image 4.8 Chef Watson features. Source: Made by myself

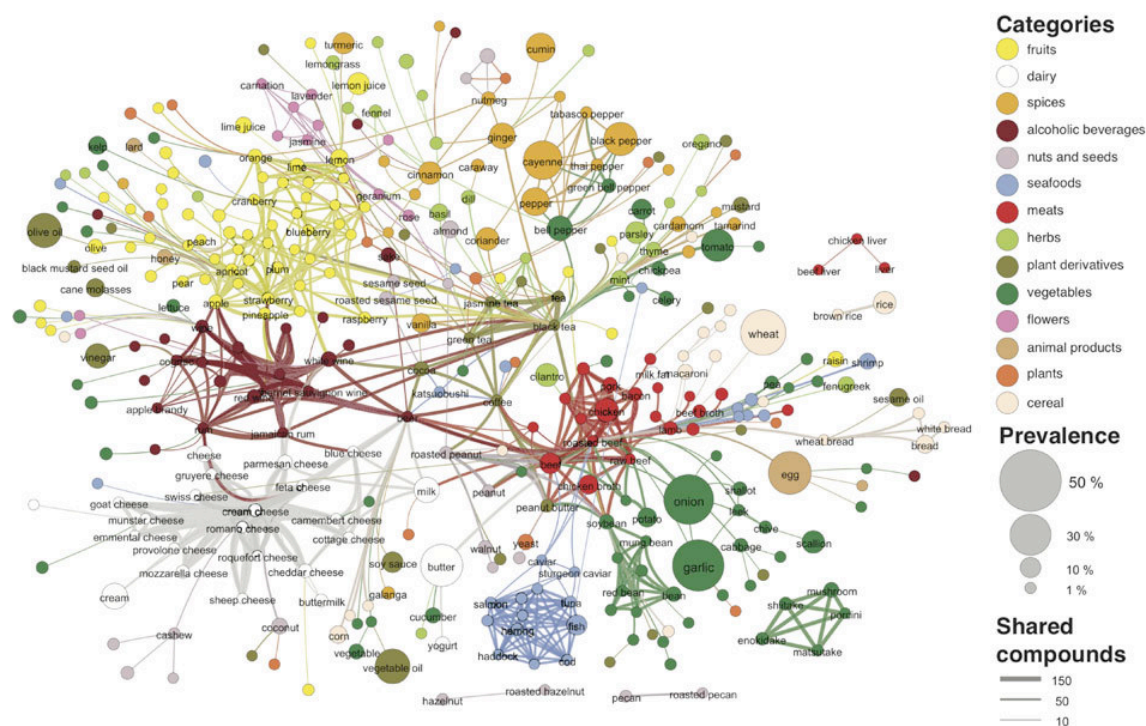


Image 4.9 Foodpairing® scientific method. Source: <https://www.foodpairing.com/en/science-behind>

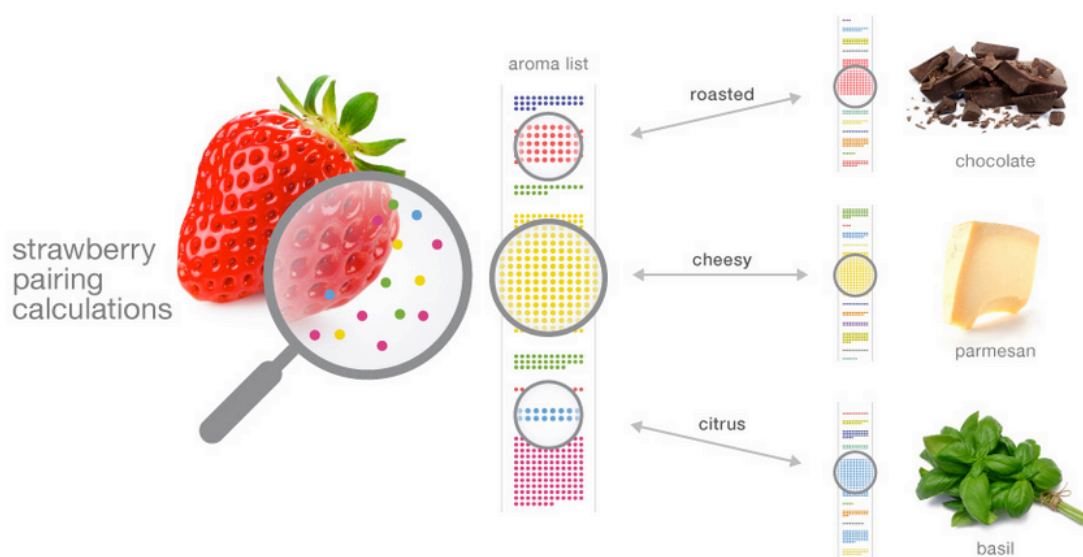


Image 4.10 Example of Foodpairing® pairing calculation. Source:

<https://www.foodpairing.com/en/science-behind>

As it can be seen, Foodly shares many similarities with Foodpairing®. Therefore, Foodly's business model should be as similar as possible. In fact, their pricing model is the following:


MOST POPULAR				
  ingredients for pairing	FREE	LITE	PRO	EXPERT
	For all culinary creatives.	For the starter chef.	For the professional chef Bartenders & mixologists F&B managers Pastry & chocolatiers Sommeliers & baristas	For the expert chef
		€ 1,50 /month (€ 1,82 incl. VAT) Billed annually	€ 7,50 /month (€ 9,08 incl. VAT) Billed annually	€ 36,50 /month (€ 44,17 incl. VAT) Billed annually
	SIGN UP	SIGN UP	SIGN UP	SIGN UP
	foods *	250	1000+	1500+
	drinks **	100	250+	250+
	Best match	✓	✓	✓
	Seasonality filter	✓	✓	✓
	Chef & local ingredients	✗	✓	✓
	Ingredients for mixology	✗	✓	✓
	Aroma filter	✗	✓	✓
	Aroma wheel	✗	✗	✓
	Discover how Foodpairing® works with a limited selection of ingredients.	Get inspired around 250 ingredients and make your first signature dish.	Inspire your menus and cocktails with more than 1000 local ingredients and 250 beverages.	Full access with insights into the aroma profile of ingredients.

Image 4.11 Foodpairing® pricing model. Source: [www.foodpairing.com](http://www.foodpairing.com)

4.3.3. Yummly™ [5]



Yummly is recipe site that really stands out for cooks. The UI is really slick, taking advantage of the latest in web technologies, which makes UX really comfortable. [5] They sell their APIs to Google, Unilevel, Ask, Stanford University, etc. Thus, it is not cheap.

API	Features	Pricing Model	Technology
Yes	<p>Easy to search, find and organise recipes</p> <p>Personalised depending on your expertise level, your taste, diet, etc</p> <p>Really good interaction with the user: there is a “Yummly discuss” to talk about cooking</p> <p>Faceted filters</p>	<p>Publicity. They will have a PRO version but only for APP version, not in the website. They get most of their funding by selling their APIs</p>	<p>Food Genome &amp; Yummly Algorithms</p>

*Table 4.4: Yummly Main Features. Source: made by myself*

Its UX is simple and intuitive. It has 4 bars in the menu and is highly organised. It shows you the trending topic recipes. It gives you recommendations based on your taste. Its pricing model is pragmatic and useful. Yummly APIs price is the following:

The image displays three pricing plans for Yummly APIs on an orange background. Each plan includes an icon, a list of features, and a price per month. A 14-day free trial is included for all plans.

Plan Name	Icon	API Calls / Month	Price / Month	Additional Info
THE Blue Plate Special	Icon of a fork and spoon	250k API CALLS / MONTH	\$500 / MO	Full Yummly database access, Recipe search filtering, Basic recipe data w/images, Yummly Attribution Required, Additional Calls: \$0.002/call
THE Prix Fixe	Icon of a bowl and spoon	4M API CALLS / MONTH	\$5k / MO	Full Yummly database access, Recipe search filtering, Basic recipe data w/images, Local caching of 1000 recipes, Yummly Attribution Required, Additional Calls: \$0.001/call
THE Custom Plan	Icon of a knife and cutting board	-	Inquire Now	If Yummly API plans or API features do not match your needs, please contact us about crafting a custom plan. Custom plans start at \$75k/year.

Image 4.12 Yummly API's price Source: <http://developer.yummly.com>

There is also the chance to request the academic and the hackathon plan:





Image 4.13 Yummly API's price for academic and hackathon plans. Source: <http://developer.yummly.com>



#### 4.3.4. SuperCook [6]

Supercook is a website that offers customized ingredient suggestions. It helps you make smart decisions about ingredients to buy. It is focused on saving money and time because it uses the food you have in your kitchen. Therefore, it ends food waste.

API	Features	Pricing Model	Technology
Yes [7]	<p>You can add restrictions (i.e. gluten free)</p> <p>Uses seasonal and unusual ingredients. It shows homemade and easy-to-make dishes</p> <p>Easy to enter ingredients (a word cloud below, see Image 4.14)</p> <p>If you register for a free account, it can save recipes and remembers your ingredients</p>	Publicity among recipes	Finds recipes from across the web based on ingredients

Table 4.5: SuperCook Main Features. Source: made by myself



It has some cons. For instance, it drives you many times to a new website when you click on a recipe. This is very uncomfortable. It is not very innovative either, but it is great for housemaids and students.

It has a partnership with grocery stores that can link the grocery card with Supercook which provides instant access to your purchases. You can also scan UPC codes and select from a list of suggested ingredients.

The following images show how Supercook works. It has different labels on the leftside (Ingredients suggestions, My Kitchen, Suggestion, Restrictions). You can click on each word to add it to your pantry.

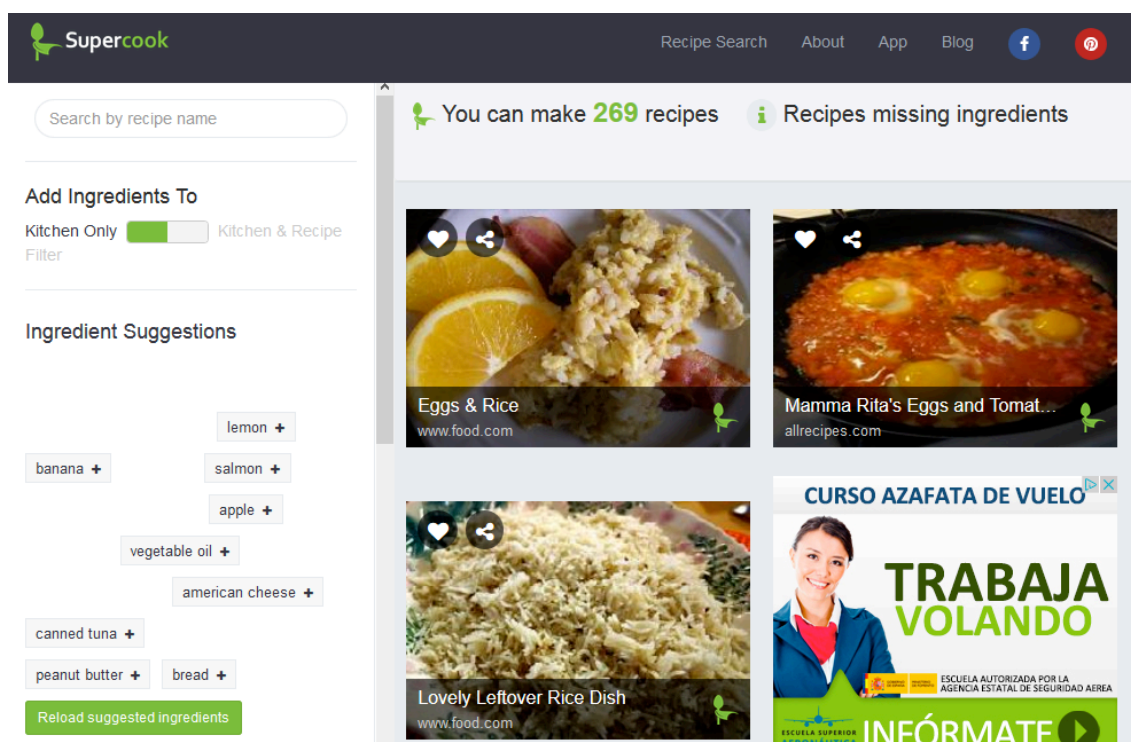


Image 4.14 Supercook's website. Source: <http://www.supercook.com/#/recipes>

There's also a smart "Shopping List" that takes stock of what you have in your pantry and suggests other ingredients to increase the number of recipes you can cook.

On Image 4.15, you can see the rest of the labels available.

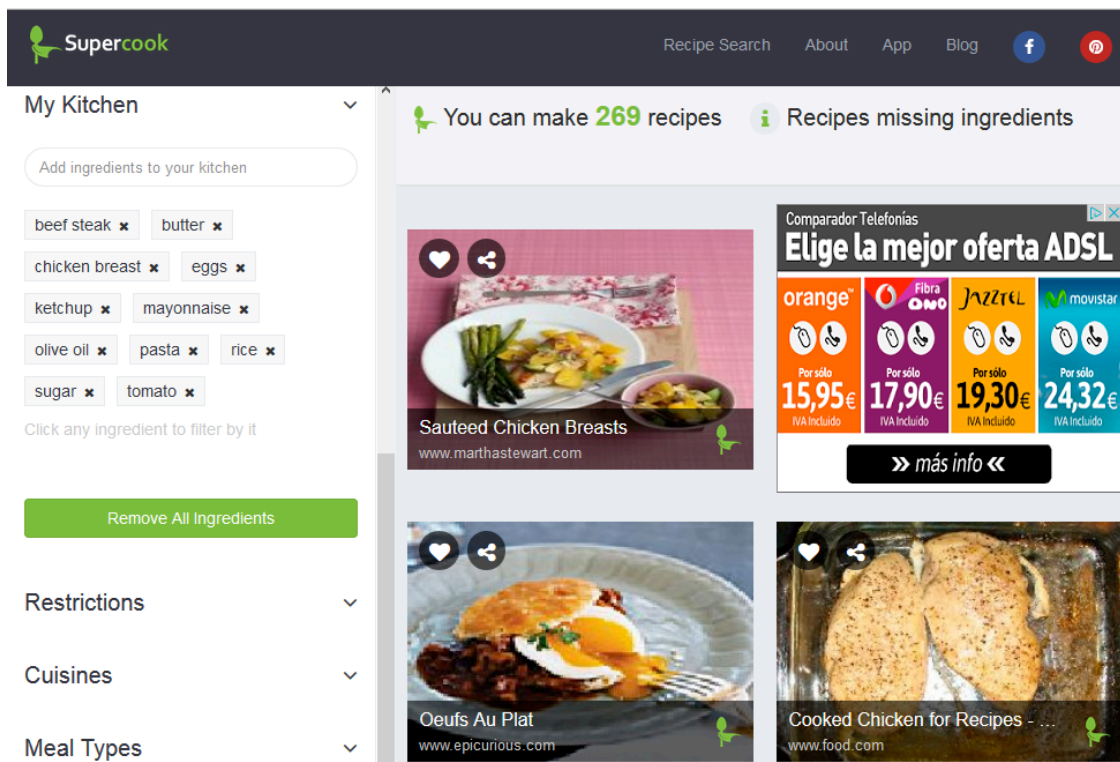


Image 4.15 Supercook's website. Source: <http://www.supercook.com/#/recipes>

As both images show, publicity is their way of gaining money.



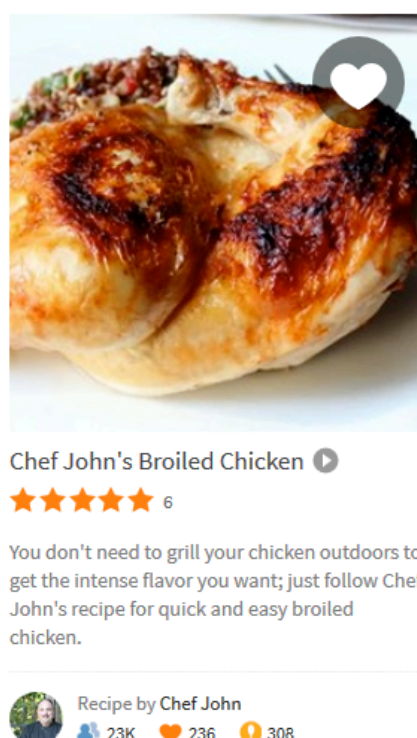
#### 4.3.5. All recipes®

It is one of the world's largest digital food brands. Every year, 700 million people visit their site. [8]

API	Features	Pricing model	Technology
No	<p>You can arrange recipes by title, punctuation and relevance</p> <p>You can see how many people has saved a certain recipe (they save it using one of the three simple emoticons they show next to the recipe, see Image 8)</p> <p>The preparing method of the recipe is very well explained</p> <p>Easy to follow</p>	Publicity. It has a PRO version for its app, which is \$5. Its website has also a PRO version, see Image 9	--

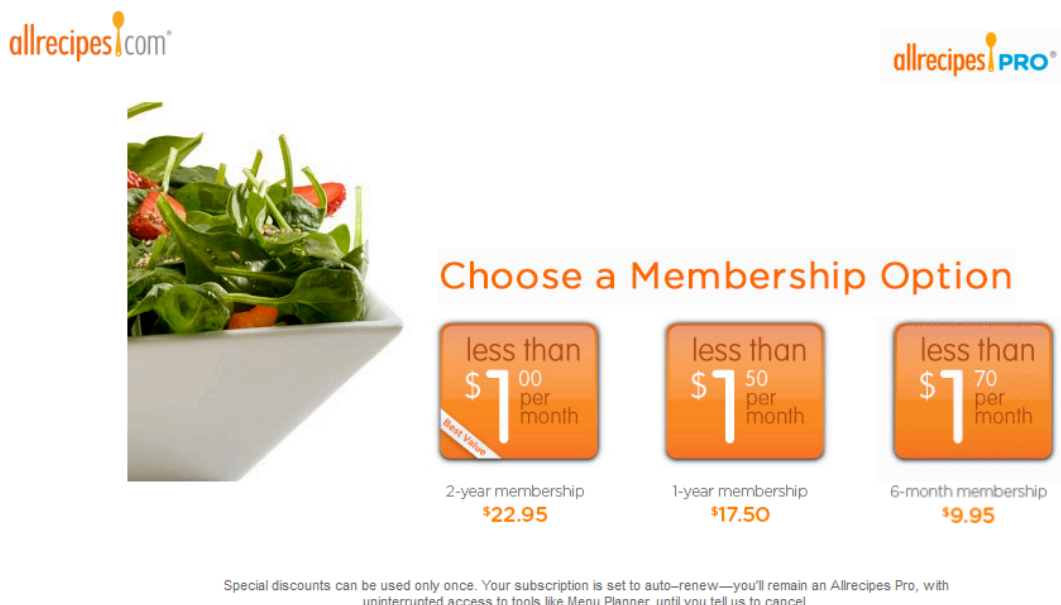
*Table 4.6: All recipes Main Features. Source: made by myself*

Referencing an iPad while cooking is usually far less cumbersome than using a computer, and the free Allrecipes app puts thousands of recipes at your fingertips. The \$5 Pro version gets rid of ads and lets you sync with your Allrecipes.com account's recipe box and shopping lists. [9]



*Image 4.16 How Recipes are displays in allrrecipies.com. Source: <http://allrecipes.com/>*

You can see how many people have saved that recipe, how many followers the cooker has and how many recipes that cooker has.



allrecipes.com

allrecipes PRO

Choose a Membership Option

Membership Option	Less than \$ per month	Total Price
2-year membership	\$1.00	\$22.95
1-year membership	\$1.50	\$17.50
6-month membership	\$1.70	\$9.95

Special discounts can be used only once. Your subscription is set to auto-renew—you'll remain an Allrecipes Pro, with uninterrupted access to tools like Menu Planner, until you tell us to cancel.

Ima

4.17 All recipes' site pricing model. Source:

<https://secure.allrecipes.com/membership/signup/supportingmembership.aspx>

#### 4.3.6. Epicurious [10]

epicurious

Epicurious focuses on recipe creation and helping home cooks. It has an advanced search from really everything you need in cooking. It is a digital brand for users interested in food and cooking.

The website was created by [Condé Nast](#) in 1995 and is now part of the publisher's Food Innovation Group. [11] Epicurious also serves mobile content through apps available across multiple platforms, including Android, Windows, and iOS phones and tablets, as well as the new Apple Watch. [12]

API	Features	Pricing Model	Technology
Yes <sup>1</sup>	<p>Find recipes that are personalized to your cooking style</p> <p>All your recipes (from anywhere in the web) saved and searchable in one place.</p> <p>Use your location to find out what ingredients are in season near you.</p> <p>Alert feature so you do not forget an item on your shopping list</p> <p>Take pictures of your delicious food in the app and instantly share over social with your friends.</p> <p>Voice-activated commands</p>	<p>They sell a Recipe Box Sync for \$1.99 that you can use to rebuild your food list. The show a lot of publicity and mostly, they recommend their own restaurants</p>	<p>It is a collection of recipes from every issue of bon Foodly, SELF, Gourmet, Parade, Nutrition Data and Random House magazines (all owned by Conde Nast).</p>

*Table 4.7: Epicurious Main Features. Source: made by myself*

In my view, it is too much elaborated, it has too many places where you can click, too many bars, slides, windows and options. I prefer something simpler.

It has a window where it explains how to take care of your kitchen gadgets (knife guide, etc). It also has the option to have the advice of an expert, who talks about interesting topics related to cooking.

Regarding UX (User experience), it has a really good experience with the user ("From our friends" is used to upload users' recipes). They also have a trending topic dishes part in every tab, which is very original (See image 10)

<sup>1</sup> In January 2013, the Epicurious recipe box switched to a new API powered by ZipList.com [13]



Image 4.18 Experts’ advice tab trending topics. Source: [www.epicurious.com](http://www.epicurious.com)

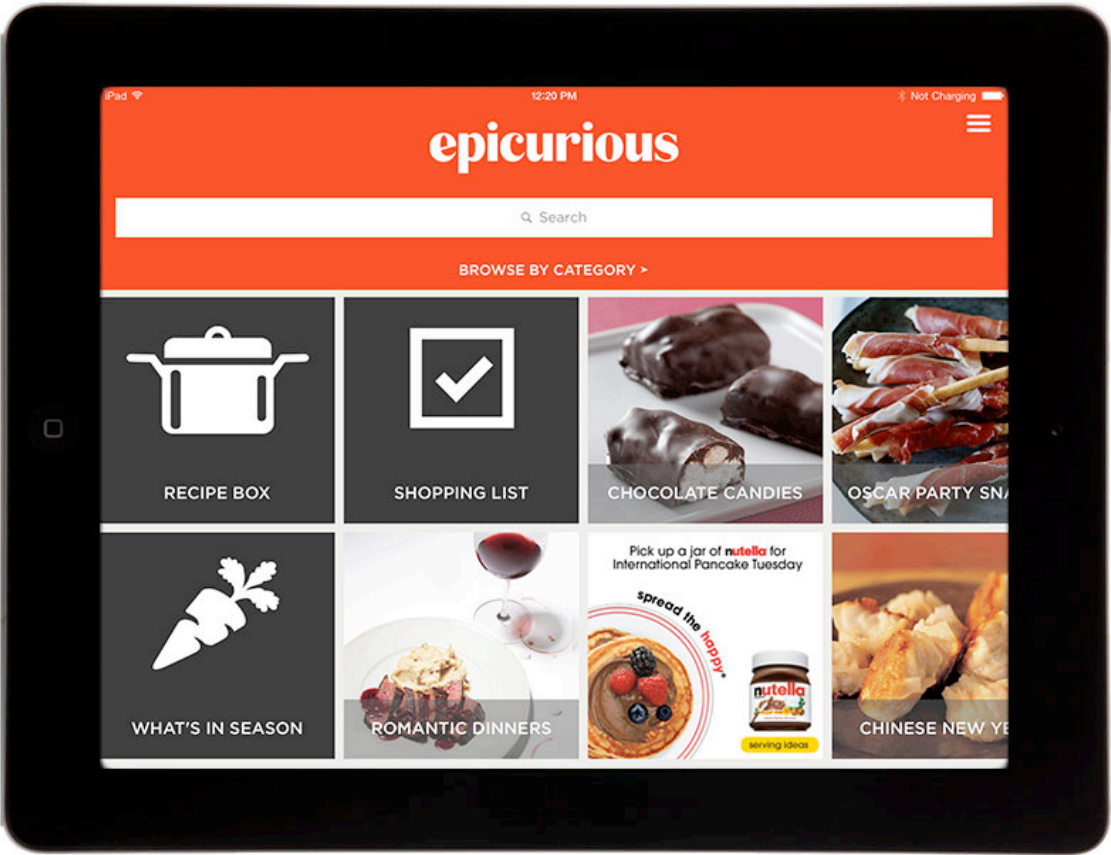


Image 4.19 Epicurious frontpage. Source: [www.epicurious.com](http://www.epicurious.com)

4.3.7. Conclusions

The following table shows a study of pros and cons of different websites that are focused cooking and helping to cook.



Positive Features	Negative Features
<ul style="list-style-type: none"> <li>• Have a dish classification arranged by season, festivity (Christmas, 4th July...), level of expertise, etc.</li> <li>• The user likes to be asked about the ingredients he dislikes and thus, the site should show recipes without that ingredients</li> <li>• Be able to click in predefined ingredients. Useful to have an autofilling service when writing and ingredients, but the best is only to click (Yummly and Supercook are a good example of this). Take as an example: <a href="http://www.recipebridge.com">www.recipebridge.com</a> or <a href="http://www.supercook.com">www.supercook.com</a></li> <li>• Be able to save recipes you like. Interesting if the site can create you a weekly menu.</li> <li>• Very important to have the possibility to share with social networks</li> <li>• Be able to have different visualizations possibilities of the recipes (as a grid for example). See <a href="http://www.recipebridge.com/r/asparagus-recipes#">http://www.recipebridge.com/r/asparagus-recipes#</a></li> </ul>	<ul style="list-style-type: none"> <li>• Searching recipes “tal cual” in not very comfortable. The least the user thinks, the best. That is, is important to insist on the autofilling option.</li> <li>• Avoid clicking in a recipe a sending the user to another window/website.</li> <li>• Even though it may sound obvious, take care of the videos/photos quality</li> <li>• Do not overload the website with links/bars/tabs. When a website is too “elaborated”, it may end up being chaotic. Take as an example: <a href="http://www.epicurious.com">www.epicurious.com</a></li> <li>• Too much publicity “stresses” the user</li> </ul>

Table 4.8: Webs review. Source: Made by myself

Also, other aspects to consider:

- [recipe-finder.com](http://recipe-finder.com) allows to make searches by voice. It is also a good idea to makes dishes by voice.
- Regarding to the user interaction, it is appropriate to be able to see the popular dishes of the summer, for instance. Also, it is positive to see how much people have save a recipe, the time you spend cooking it and people opinions about that recipe. It is highly professional that when you register, they ask you some personal information and that they ask you for how many people you normally cook (in order to show the recipes in the good quantity of food). Take as an example yummlly (<http://www.yummly.com>), which performs it very well.

### Personal consideration

The most referent website should be Yummly (<http://www.yummly.com>). It has a really good UX, very well developed and with a really good data base. However, its API are not cheap (<http://developer.yummly.com>). It sells them to big companies such as Google, Ask, Unilever, etc. and to Stanford University (among others). Supercook ([www.supercook.com](http://www.supercook.com)) and Tastebook (<http://www.tastebook.com/>) has original ideas that can be imitative. Foodly's

business model should be developed depending on the type of user. According to its level of expertise, it may make up for some or other pricing (pay more or less depending on whether you are beginner, intermediate or a great chef). Moreover, take into consideration the way of paying of <http://allrecipes.com><sup>2</sup>

All the details can be found in the appendix (in Spanish).

### Further analysis of the most interesting websites

Chef Watson and Foodpairing® have been studied apart. The examining time has been longer due to their technology and business model. Both of them have an interesting pairing technology, which is similar to Foodly's, though they are not as complex. However, they are based on a similar idea. That is why, even a more thorough analysis should be carried out with these two.

## 4.4. Business Model

The business model is on the lookout for details, but it will work under subscription. The basic model has to be functional and efficient. In fact, Luis Ignacio Díaz del Dedo, Growth Hacking CEO, insists a lot on this. If Foodlye wants to grow higher it has to have the **basic functionalities and features for free** (Yummly.com and Allrecipes.com are a good example). The basic model has to be highly functional.

All models should create a full profile when you register. That is, ask you:

- Personal details (name, gender, age, weight, allergies, country)
- Ingredients you dislike and ask about their preferred type of cooking (Mediterranean type, for example). Do so, to be able to recommend the user closer dishes
- Number of people you cook for and household size (adults or kids)
- Considered level of expertise
- Photo
- Have the possibility to register by Facebook, google, twitter, Pinterest or email

### 4.4.1. Expertise degrees

- ✓ **For all culinary creatives: Basic model.**

It includes budget, season, country, type of cooking, dietetic, etc. filters. It has no chef/flavour/texture filter. Only a low amount of recipes can be visualised/downloaded

---

<sup>2</sup> It has a PRO version. 2 year membership \$22,95, 1 year membership \$17,70, 6 months \$9,95



(40). The most creative ones will not be displayed.

It can show the trendy recipes

You can search, save and organise recipes (though all the recipes and creations will be public)

Be able to get involved in Foodly's discussions or something similar, in order to speak about cooking among users

Social networks connections

✓ **For the starter chef: Trainee.**

It has flavour filters for combining ingredients. You can download more recipes than the basic model (100). All elaborations are private with the chance of publishing it in the web.

✓ **For the professional chef: Foodie**

You can see how many people have saved a recipe

Bridging filter combination: flavour/taste/smell/texture filter, chef filter, etc. You can download unlimited recipes.

✓ **For the expert chef: Chef**

Drawing tool. All the mentioned functionalities plus they can export the recipe in text/PDF. They would have a personalised chef filter where she/he will be able to import her/his own recipes to define its own style.

## 4.5. Pricing models

Susana Jurado, Innovation Manager at Telefónica R&D, studied Foodpairing® pricing (see Image 3) model and elaborated the following one:

PRICING MODEL	Price (€/month)	Description
<b>Silver access</b>	2	Full access to ingredients and tool features
<b>Gold access</b>	10	Full access to ingredients and limited access to tool features
<b>Platinum access</b>	50	Limited access to ingredients and tool features

Table 4.9: Pricing models. Source: made by myself

However, there are other possibilities to be considered. For instance, you could pay by time of membership. Thus, for a 6-month membership you could pay a certain amount depending on the model you choose. For instance, the basic model could be:

<b>Basic Model</b>	
2 year membership	€29,95
1 year membership	€19,95
6 months	€12

*Table 4.10: Pricing models by years of membership. Source: made by myself*

Allrecipes.com uses a similar model. See Image 8.

1. There is the chance you get remuneration by selling the APIs, like Yummly does (see Image 4 and 5)
2. Also, Foodly could sell within their App some “features”. [Epicurious](#), for instance, sells a Recipe Box Sync for \$1.99 in order to use it to rebuild your food list [13]

## 4.6. Market Size

However, to analyse the pricing, it is interesting to study the market size.

The different target users have been examined:

### 4.6.1. Foodies

Considering that this global market can be addressed with a top name as Adrià, a 1%-10% penetration could be achieved in these markets. The numbers of foodies around the world are the following:

<b>% of foodies in US</b>	14%
<b>% of foodies developed countries</b>	14%
<b>% of foodies in low-income countries</b>	5%
<b>Foodies growth rate per year</b>	10%

*Table 4.11: Number of foodies around the world. Source: [14]*

This opportunity could be bigger if other opportunities were considered, such as allergy/dietary restrictions, alternative ingredient finder and shop, that could also be analyzed. Considering the amount of people living in the different continents, the number of foodies can be estimated:

	<b>Population</b>	<b>Number of foodies</b>
<b>Europe</b>	742.452.000	103.943.280
<b>North America</b>	565.265.000	79.137.100
<b>Australia and Oceania</b>	38.304.000	5.362.560
<b>South America</b>	406.740.000	20.337.000
<b>Asia</b>	4.298.723.000	214.936.150
<b>Africa</b>	1.110.635.000	55.531.750
<b>Total</b>	7.162.119.000	479.247.840

*Table 4.12: Number of foodie's estimation. Source: [14][15]*

Therefore, the foodies' market size could expand up to the following quantities:

	<b>Optimist case (€/month)</b>	<b>Pesimist case (€/month)</b>	<b>Optimist case (€/year)</b>	<b>Pesimist case (€/year)</b>
<b>Europe</b>	4.157.731	2.078.866	49.892.774	24.946.387
<b>North America</b>	3.165.484	1.582.742	37.985.808	18.992.904
<b>Australia and Oceania</b>	214.502	107.251	2.574.029	1.287.014
<b>South America</b>	813.480	406.740	9.761.760	4.880.880
<b>Asia</b>	8.597.446	4.298.723	103.169.352	51.584.676
<b>Africa</b>	2.221.270	1.110.635	26.655.240	13.327.620
<b>TOTAL</b>	<b>19.169.914</b>	<b>9.584.957</b>	<b>230.038.963</b>	<b>115.019.482</b>

*Table 4.13: Foodie's market size estimation. Source: made by myself*

The average of foodies that would buy our tool would be more or less:

	Optimist case	Pesimist case
Platinum	0,00%	0,00%
Gold	0,00%	0,00%
Silver	2,00%	1,00%

*Table 4.14: Average of estimated foodies that could buy our tool. Source: made by myself*

#### *Is the Market growing?*

- Foodie's demand sees 25% rise in independent food merchants in London [16]
- Personal-spending report shows that consumer's boosted outlays at restaurants by an annual 9.5% pace in the same September-to-January time frame. This news is from March 2015 [17]
- Funding to online food and grocery delivery startups hit a new high in the third quarter of last year and a total of \$1.56 billion for the previous four quarters, according to research firm CB Insights [17]
- Millennials Eating Up YouTube Food Channels, Driving 280% Growth In Subscriptions [18]

Indeed this market is growing. There is an increasing interest in innovative food. Therefore, there is an increasing number of foodies daily. In fact, 76 percent of U.S. adults enjoy talking about new or interesting foods and 53 percent of U.S. adults regularly watch cooking shows. Almost 70% of adults buy specialty foods for everyday home meals. Also, 54% of casual diners are considered foodies because of their desire to always or usually try new menu items when going to a restaurant. [19]

#### **4.6.2. Chefs and restaurants**

The number of restaurants and its features were studied. [20]

Restaurants in Spain	79.000
8,6% are full service restaurants	6.794
52% are mid-range price	41.080
Restaurants in the world	
Low-income countries have 1 restaurant unit per 618 people	0,001618123
Upper-middle countries has one restaurant unit per 268 people	0,003731343
% of restaurants that are our target	60,6%

*Table 4.15: Restaurants statistics. Source: TEF's R&D Team*

### RESTAURANTS IN THE WORLD [21]

The average number of restaurants across all countries is 1 restaurant unit per 477 people:

- ✓ Low-income countries have approximately 1 restaurant unit per 618 people
- ✓ Upper-middle countries group has one restaurant unit per 268 people

In Spain there are 79,000 restaurants. The 8.6% are full service restaurants, which leads to a number of 6,800 restaurants where around the 50% are mid-range price restaurants. This gives a number of 41,000 restaurants.

The considered average of chefs/restaurants that would buy our tool is the following:

	Optimist case	Pesimist case
Platinum	0,01%	0,00%
Gold	10,00%	5,00%
Silver	2,00%	1,00%

*Table 4.16: Considered average of chefs/restaurants that would buy our tool. Source: TEF's R&D Team*

### **4.6.3. Cooking schools**

Cooking schools [22] would be an interesting market that is why the number of cooking schools has been analysed.

	# of cooking schools	Population	Ratio of cooking schools
<b>Italy</b>	442	60.788.845	0,000007271
<b>Spain</b>	172	46.439.864	0,000003704
<b>USA</b>	98	321.403.000	0,000000305
<b>Argentina</b>	30	43.131.966	0,000000696
<b>Bolivia</b>	7	11.410.651	0,000000613
<b>Chile</b>	3	18.006.407	0,000000167
<b>Colombia</b>	10	48.214.300	0,000000207
<b>Costa Rica</b>	5	4.773.130	0,000001048
<b>Alemania</b>	17	81.083.600	0,000000210
<b>Ecuador</b>	4	15.476.000	0,000000258
<b>Guatemala</b>	7	16.176.133	0,000000433
<b>México</b>	23	121.005.815	0,000000190

*Table 4.17: Cooking schools statistics. Source: [23][24] [25]*

442 public and private gastronomy schools in Italy

137,000 restaurants and catering businesses, with a growth in ten years of more than 50%

The cooking schools market size is the following:

	Optimist case (€/month)	Pesimist case (€/month)	Optimist case (€/year)	Pesimist case (€/year)
Europe	1.557	778	18.689	9.342
North America	1.186	593	14.229	7.112
Australia and Oceania	80	40	964	482
South America	853	426	10.238	5.118
Asia	9.017	4.507	108.207	54.087
Africa	2.330	1.165	27.957	13.974
<b>Total</b>	<b>15.024</b>	<b>7.510</b>	<b>180.283</b>	<b>90.115</b>

Table 4.18: Cooking schools market size estimation. Source: TEF's R&D Team

The average of cooking schools that would buy our tool is:

	Optimist Case	Pesimist Case
<b>Platinum</b>	20.00 %	10.00 %
<b>Gold</b>	0.05 %	0.01 %
<b>Silver</b>	10.00%	10.00%

Table 4.19: Average of cooking schools that could buy out tool. Source: TEF's R&D Team

#### 4.6.4. Conclusions

In sum, it has been considered that the market size would fluctuate as the following:

	Optimist case (€/year)	Pesimist case (€/year)
Foodies	230.038.963	115.019.482
Chefs	109.684.605	54.579.899
Cooking schools	180.283	90.115
<b>Total</b>	<b>339.903.852</b>	<b>169.689.495</b>

Table 4.20: Cooking schools market size estimation. Source: TEF's R&D Team



The average of potential clients who would buy our tool would be estimated as something similar as the following:

	OPTIMIST CASE	PESIMIST CASE
% of foodies that buy our tool		
Platinum	0.00 %	0.00 %
Gold	0.00 %	0.00 %
Silver	10.00%	1.00%
% of chefs/restaurants that buy or tool		
Platinum	0.01 %	0.00 %
Gold	10.00 %	5.00 %
Silver	2.00%	1.00%
% of cooking schools that buy our tool		
Platinum	20.00 %	10.00 %
Gold	0.05 %	0.01 %
Silver	10.00%	10.00%

*Table 4.21: Market size estimation depending on the target users. Source: Made by myself*

The market size expands from 170M€ to 339M€. It is a global opportunity.

## 4.7. Customer Development

### 4.7.1. The MVP<sup>3</sup>

Also, as part of the lean methodologies, the MVP (minimum valuable product) was developed. The MVP based its initial features in describing a bridging workbench. Before developing the full MVP, the research team classified the features in two parts: core features and shell features.

- Core features: must-do features which are the base for the other ones
- Shell features use core features to build a shell around the core.

For each feature we define a basic functionality and an enhancement.

#### CORE FEATURES

There are some principles they followed:

- They did not use hover effects, but clicks. This way they could easily show the application in a touch screen as well as in a desktop or any other screen.
- They only showed a selected bridge at a time, that is, if there are two bridges on screen, only one of them will be selected at a time.

This is the list of core features:

1. List of ingredients. Allow the user select a list of ingredients. We will show a list of all the ingredients by name.
2. Ingredient description. For each ingredient there is a picture, a name and a description. Some ingredients will not have a picture nor a description. The user will request this information wherever in the application.
3. Add an ingredient to the current elaboration. Users will add an ingredient by typing the name. An autocomplete list shows after typing 3 characters. The matching is based on matching the initial characters. To allow quickly entering ingredients, the Enter key will add the first matching ingredient. There is also a plus button that will

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<sup>3</sup> The MVP is not a small version of a product, process, or similar. It is the fastest and cheapest way to validate a hypothesis of your solution. It can be something drawn in a napkin, a presentation, a mockup, etc

allow adding the ingredient. Clicking on the ingredient from the autocomplete list will also add the ingredient.

4. Delete an ingredient. Deleting an ingredient removes it from the elaboration. When an ingredient is deleted the visualization should be coherently updated, that is, if we delete:
  - A bridge element: it is removed from the visualization, it is removed from the bridge, and added to the list of substitutions.
  - An anchor: you are not allowed to delete an anchor.
  - Any other ingredient: it is removed from the elaboration, and thus from the visualization.
5. Create a new elaboration. The app asks the user to confirm the clear operation. In case the changes are not saved, the application will ask for a confirmation to discard the current status. The new elaboration starts with no ingredient on it.
6. Bridge ingredients. The user selects two or more ingredients (the anchors) by clicking on them. An initial bridge of length one is calculated.
7. Operations on a bridge.
  1. Substitute an ingredient in a bridge. The user selects the ingredient to substitute, clicks on the substitution tool on the bottom, and the app shows a list of proposals for the substitution, with a limit of N ingredients ( $N=3$  or  $N=5$ ). The user selects one of the proposals. The app stores the name of the original ingredient and all of the substituted elements.
  2. Add new element between two ingredients. In bridge mode, a user ask for a proposal of a new ingredient that enhances the flavour between two elements of a bridge.
  3. Remove an element between two ingredients of a bridge. The user removes an ingredient that links two other ingredients. The ingredient disappears from the screen, it is removed from the list of ingredients of the elaboration. The ingredient is added to the list of substitutions for the bridge.
8. Give a name to the current state of the workbench. The user selects a name to store the elaboration. The name is shown on the top of the screen.

9. Store operations. For each operation (add, delete, bridge, calculate, etc.) store it in the server. Enhancement: allow the user to undo or redo operations. Allow a history list, so users can jump to a point in the history.

### **SHELL FEATURES**

1. Decouple a bridge. The user decouples a bridge and the ingredients become first class citizens of the current elaboration, and they are not related to each other anymore.
2. Selecting of ingredients in the workbench. The user selects ingredients by dragging a selection box or by direct click. There is a way to add or delete elements from the selection. Selected elements show in a different way.
3. Delete an anchor ingredient. The bridge is decoupled and then the anchor is deleted from the elaboration.
4. Save to PNG. Store the elaboration as a PNG image, to allow later sharing.
5. Content contributions. Some ingredients will not have a picture nor a description. In that case, the user may propose a source or a description to improve the data.
6. Missing ingredients. The user will appoint a missing ingredient by name, description and picture.
7. Permalinks. There is a URL for the current bridge status. The user will peak it up and share it. The share URL will show a PNG of the bridge, but not the raw data.
8. Sample elaborations. Show sample elaborations created with the tool. The application will show a set of sample bridges, like "Ferran's tomato elaboration".
9. Public vs private elaborations. All the elaborations are public by default. If the user would like to keep them private, he should subscribe or pay for it.
10. Login. The user should login to access some features of the application, like saving or sharing.
11. Tutorial. A set of screenshots will show how to use the application. The decision on this depends on the kind of attended / unattended usage of the portal.
12. User feeling about an elaboration. The user will select his feeling about an elaboration: happy, rubbish, not try, etc.
13. Bridge 2 ingredients. Enhancement: The user first selects an element and drags the pointer from the inner part of the ingredient to the other anchor ingredient.

14. History: get a list of the operations of a user

Foodly will be provided as a website tool. Also, it will be able to adapt to tablets and mobiles. The visual part looked like the following pictures:

#### 4.7.2. Get out of the building approach

##### DIRECT FEEDBACK FROM INTERVIEWS WITH POTENTIAL CUSTOMERS

The Lean Startup Methodology requires a deep understating of the customers. This implies investing time to test and pivot, but to do so, a customer development must be carried out. Using the MVP, many interviews were conducted and many distinctive chefs have been interviewed about Foodly. Chefs' interviews are needed to validate the food bridges and get more insights with the prototype on how the tool should work in order to fit the chefs' process.



Image 4.20 Paul Ibarra. Source: <http://www.santutxupintxotan.com/paul-ibarra/>

**Paul Ibarra.** R&D Head at Etxanobe (1 Michelin star). Manager and chef at “Los Fueros”  
“Its chef data base is amazing”, “*Si me la pones aquí, le voy a sacar chispas a vuestra aplicación*”



Image 4.21 Benjamín Lana. Source: [www.diariosur.com](http://www.diariosur.com)

**Benjamín Lana.** Vocento Board Member. Culinary Journalist and Foodie

“The cooking world is willing to embrace new technologies (...) If TEF does not develop this Project, let’s do it you and I”



Image 4.22 Mario López Source: [www.montareloconsulting.com](http://www.montareloconsulting.com)

**Mario López.** Entrepreneur, IE business school professor and startups mentor  
*"I think it is very very interesting and that there is a lot of money in the technology and gastronomy field"*



Image 4.23 Damian Allsop. Source: [www.chocolatier.uk](http://www.chocolatier.uk)

**Damian Allsop,** Chocolate and food entrepreneur, Girona  
*"Going a little bit against the stream, and creating something new out of ordinary"*

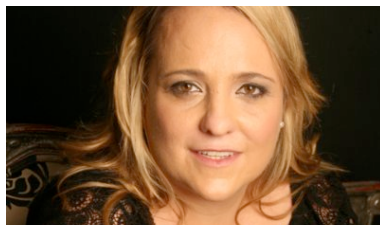


Image 4.24 Tamarin Blackmur. Source: [www.foodtravelist.com](http://www.foodtravelist.com)

**Tamarin Blackmur,** professional chef and Ireland master chef winner 2012  
*"I never want to compromise on quality and my vision is always wanting something a bit different"*

These chefs have very diverse creation and inspiration processes, but who share their passion for quality ingredients.

### 1. They had diverse wishes and needs when cooking

*"Your own back-up tool to keep recipes, measurements and processes in one place"*

*"A system to receive information while cooking and save it. Voice recognition, or an electronic tap with a pen to scabble downs all notes while cooking/experimenting"*

They also wanted something to stock control to minimize losses: *"It's a challenge to control stock, there is a lot of money on products that we have to throw away because of bad storage"*

## 2. They share many pains and needs

When talking about pains they faced when cooking, they agreed in terms of timing and administrative problems “Every day I want to leave at 5 but I always leave at 8 due to administrative, equipment or staffing problems” and problems such as “How to translate the vision to staff, from spec to the product”

We explained them Foodly and it was perceived novel and interesting, and improved way to use a flavour bible. In sum:

1. They thought a collaborative creation Tool: *“It is very novel, I see it as a perfect tool for participative creation process with other chefs”*
2. It is an open to combine with own database: *“How can I Add MY knowledge to it and how deep does the database go, is it open and not closed environment like most databases”*.
3. It provoked curiosity and relevance: *“very curious about the tool and could imagine using it very frequently”*

All the interviewed chefs want to become beta testers.

### 4.7.2.1. Conclusions made from these interviews

#### **WHAT: ALTHOUGH CHEFS HAVE VERY DIFFERING CREATIVE PROCESSES AND SOURCES OF INSPIRATION, THE TOOL COULD AUGMENT THEIR MENTAL PALADAR**

1. DECONSTRUCT AND EVOLVE DISHES: *“Creative process is about breaking things down and rebuilding them by questioning ingredients”*
2. INCREASE PROCESSING POWER: *“It is very similar to the way a brain works, it brings out a well thought out combination. Chefs have their brain processing constantly how to combine ingredients”*
3. UNDERSTAND AND DISCOVER COMBINATIONS: *“I would like to use the tool for exploring all possible combinations to an ingredient that I happen to have a lot during a season, or to help understand why a dish works”*
4. EVALUATE UNIQUENESS OF VISION: *“A book (Flavour bible) can be tedious, but I could imagine using the website to understand better the specific ideas in my head, narrowing down ingredients options while ensuring uniqueness of the dish”*

#### **WHY: THE TOOL WOULD HELP CHEFS DIFFERENTIATE THEIR OFFER, ADAPTED TO THEIR CLIENTELE, STYLE, SEASONALITY AND KNOWLEDGE OF INGREDIENTS**

1. MAINTAIN CONSISTENT QUALITY AND STYLE *“It’s a constant challenge to produce at a consistent level” “You need a reasoning to select a bridge, you need to have the concept of a dish clear”*
2. DIFFERENTIATE AND SATISFY CUSTOMER DEMAND *“You need to constantly change and evolve to satisfy the continuously growing demand. To satisfy many different customers with one product”*
3. PERSONALIZE AND SUBSTITUTE ON THE FLY *“It would help chefs to personalise the dish and exceed expectations for diverse target groups, create a WOW with the same base ingredients”*
4. WORK WITH UNKNOWN FLAVOURS AND INGREDIENTS *“When working with new ingredients, I would use the tool to double check my idea that if something will work in practice”*

#### **WE MANAGED TO SEE THAT EXPERIENCED CHEFS DO NOT REPLICATE RECEIPTS BUT APPRECIATE TIPS ABOUT HOW TO EVOLVE THEIR SKILLS WITH EXISTING KNOWLEDGE**

*“Tips about the process are important, as they help me to decide what to take from the proposed process and what way to go – how to adapt the recipe”*

*“The most important function for the tool for me would be to help me get my own idea about it and then I go on about realizing it”*

*“A tool to understand combinations, and a platform to combining my own experience with other experiences”*

### **4.8. Display of the App<sup>4</sup>**

Due to confidential reasons, display of the app images cannot be shown. However, a brief explanation is going to be made.

Foodlye display will be intuitive and appealing. Its forefront image will show 4 icons where you will be able to search for recipes, read cooking news or ingredients, paint innovative patterns for your dishes and last but not least, get inspired.

The inspiring feature will join different elements - that properly fit - to show a bridge of ingredients that have a highly suitable for taste, smell, texture and flavour. It can provide raw versus cooked combinations because, for instance, raw tomato tastes a lot different than cooked or fried tomato.

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<sup>4</sup> This part of the project has been developed by the Research Team



The visual representation should help structuring dishes and work with the chance of selecting seasonality (summer, winter...). You would be able to visualize ingredients to inspire a dish and further explorations: Ingredients, flavour combination, menus history. There is the possibility of selecting a country (for instance, a Spanish dish), as well as select the colour of the ingredient and the chef most inspires you. There is the chance of choosing the type of odour, flavour and budget.

## 5. Project budget

It is necessary to fix the Project budget at the beginning. Due to confidential reasons, the amount established for this certain Project cannot be revealed.

However, this chapter represents the economical cost that derives from the realisation of this Final Degree Project.

There are two types of costs that can be distinguished:

1. Human resources cost
2. Materials resources cost

### 5.1. Human resources cost

To begin with, the human resources cost corresponds to the salaries of the people involved in the development of this project. A Junior Engineer has invested a total of 320 hours to elaborate this Project. These 320 hours have been distributed in 20 hours during 16 weeks.

Also, the meetings with my tutor during the development of this project have to be taken into account. These meetings have an approximate duration of 1 hour. Thus, my Telefónica tutor (a senior Engineer) has invested around 12 hours.

It is important to consider that the cost per hour

The following Table shows the human resources cost:

	Cost per hour (€/h)	Hours	Total cost (€)
Junior Engineer	10	320	3200
Senior Engineer	30	12	360
			3,560 €

*Table 5.1 Human resources budget. Source: Made by myself*

The human resources total cost would fluctuate among 3,560 €

## 5.2. Material resources cost

The material resources cost include the renting of the working space, the power, the computer equipment and the software licenses. It is important to enhance that the cost has been calculated with the following features:

- A computer with a four-year life cycle. Every year it has an amortization of the 25% of the initial cost (the initial cost has been considered of 1800€). [27]
- The software license (Microsoft License 2013) has a three-year life cycle. It has a 33% amortization every year. [27] The initial cost has been considered of 540€.
- The estimated printing cost is 100€
- The working place rent is estimated two times your salary

Material	Annual cost (€/year)	Months used	Total cost (€)
Computer	450	4	$(450/12) \cdot 4 = 150$
Software licenses	178.2	4	$(178,2/12) \cdot 4 = 59.4$
Printing	-	-	100
Working place rent	19,200*	4	6,400
			<b>6,709.4 €</b>

*Table 5.2 Material resources budget. Source: Made by myself*

\* Considering 80 h per month worked and a 20 €/hour cost. Thus, the annual cost would be  $80 \cdot 12 \cdot 20 = 19,200$  €.

### 5.3. Total cost

Costs	Total cost (€)
Human resources cost	3,560
Material resources cost	6,709.4
<b>TOTAL COST</b>	<b>10,269.4</b>

*Table 5.3 Total cost Source: Made by myself*

The VAT is not considered as a cost since it is assumed that the company can fully deduct it.

Therefore, **the total cost of this Final Degree Project arises up to more than 10K.**

## 6. Environmental Impact

Foodly could have a repercussion in the environment, society and economic arena. It could mean the rearrangement of the culinary world. It is a complete new way of being innovative and creative based on chemical flavours.

### *Society*

Cooking Schools would reorganised all their way of teaching their students and would probably focus more on being more creative by learning with this tool. Also, students would be able to use it after they graduate.

The R&D departments of some top-notch restaurants would have to update its software and big data.

Foodies would find a pragmatic tool to easily cook with different ingredients at their houses, leaving aside the need of buying recipe books and using Google to find new recipes. Moreover, not only foodies would be able to do that, but normal food lovers who aim to improve their way of cooking.

Foodly could boost the creation of totally new dishes that will have never been tasted or seen before. In fact, in the worst case it could mean the loss of prestige of some chefs who do not adapt to this new way of getting inspired.

People will still more aware of their diet and nutrition needs because they will be able to change any recipe, keeping it as closest to the original, but with all the dietary restrictions of a specific person.

### *Environment and economy*

All the apps and sites that are about cooking and finding recipes would have to keep up to the level of this technology. They would probably have to adapt to their pace to stay competitive and not break down.

New ingredients, elements and combinations would arise. This would increase the number of purchases of previously commonly unknown ingredients. There will be an easier access to unusual ingredients. Beyond this, Foodly is based in a technology that could be applied to other fields as the viniculture and perfumes, for example. It could revolutionize all their way of innovating with just some clicks. Therefore, new markets could emerge from Foodly.

There would be a clearly easily link between chefs and providers/producers.



## Conclusions

*Regarding the specific targets*, the **technology**, which is going to be used to develop this project, is going to be a multiplex cuisine network. It works in a similar way as the brain does and encodes knowledge in network. It is based on Data Mining of recipes and analysis of chemical compounds.

Regarding the **target users**, it has been considered to focus on R&D departments of some top-notch restaurants, chef and gastronomy schools, chef, foodies and dietetic shops.

About the **competition analysis**, the most referent website should be Yummly. Supercook and Tastebook have original ideas that can be imitative. However, Foodly has been seen to be a step forward from competitors. It has many added values such as a first-hand interaction with one of the most creative chef in history, Ferran Adrià. Also, as mentioned, it has a differential foodbridging technology that any competitors have. Its technology approach is different from any of its competitors and its access to the “normalized” elBulli data helps to have more accurate results.

The **business and pricing model** is on the lookout for details, but it will work under subscription. If Foodly wants to grow higher it has to have the basic functionalities and features for free. The basic model has to be highly functional. Foodly's business model should be developed depending on the type of user. According to its level of expertise, it may hover for some or other pricing (i.e. pay more or less depending on whether you are a beginner, a intermediate or a great chef).

After analysing foodies, chefs and cooking schools, it has been considered that the **market size** expands from € 170M to € 340M, whether you consider a pessimist case or an optimist case respectively. It is clearly a global opportunity.

From the **Customer Development** study, many conclusions have been made. To begin with, although chefs have very differing creative processes and sources of inspiration, the tool could augment their ideas. The tool would help chefs differentiate their offer, adapted to their clientele, style, seasonality and knowledge of ingredients. In addition, experienced chefs do not replicate receipts but appreciate tips about how to evolve their skills with existing knowledge.

*In general terms*, this project has been able to gather not only Ferran Adrià's knowledge, but has opened the possibility to gather many other chef's knowledge. Furthermore, thanks to this Project I have been able to study and understand Ferran Adrià's and Telefónica's way of working and their way of approaching innovation and creativity.

In addition, this project is a good example of an **Open Innovation** development because they have trusted and relied on external help to carry it out. Moreover, **Lean Startup** has started to be introduced with the customer development part.

*In sum*, thanks to this FDP it has been proved that Foodly is a global opportunity and it is highly profitable. Due to Foodly, the view everyone had of cooking is clearly going to change. It is widely read that cooking is an art form. However, this statement should now be reconsidered. Not only should cooking be considered an art form, but a science and technology.

The myth that displays that only chefs could combine expertise, innovation and pleasure in the kitchen, has been finally unfolded. Foodly has conclusively solved the creativity challenge that both chefs and foodies face, cooking innovation. Foodly is the new era of cooking.



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# Appendix

## 1. Lean Startup: The methodology used to develop this project

### 1.1. Introduction

#### What a Startup is

It is a temporal organization designed to search for a repeatable and scalable business model

*A startup is not a company*

Startups are not smaller versions of large companies. For instance, Startups do not execute business model but they do look for one.

#### What “lean” is

The term "lean" was coined to describe Toyota's Production System during the late 1980s. A philosophy focused mainly on reducing waste in manufacturing. It centres on accelerating learning and reducing waste.

#### Background

It all began when the remarkable failure cases in the startups world arose the need to reduce the millions of dollars that were run-down.

Steve Blank, entrepreneur and investor, realised that the problem was that these startups were behaving like established companies with high burn rates. In 2005, Blank published *The Four Steps to the Epiphany*. Years later, he wrote *The Startup Owners' Manual*, where he introduced the Customer development methodology.

In 2011 Eric Ries, one of Steve Blank's students, published his book *The Lean Startup*. He said that Lean Startup is basically the combination of customer development and agile development.

### 1.2. What Lean Startup is

Lean startup is in essence a philosophy, a mindset that is focused on new business/product generation. It can be applied to any organisation, to every process. Therefore, any

organisation can benefit from it.

Lean Startup helps to launch products that costumers actually want, more quickly and cheaply. That is to say, it helps startups to be less risky. It is about focusing on the right stuff and reducing waste: right action, right time.

According to Blank, the Lean Startup is "a new strategy for the 21st-century corporation (...) If the entire universe of small business embraced these concepts, I strongly suspect it would increase growth and efficiency, and have a direct and immediate impact on GDP and employment".

*What's its goal?*

The ultimate goal is to provide value to the customer through a process that has zero waste.

### **1.3. Lean Startup does not guarantee success**

Success depends on many factors, thus only one methodology cannot guarantee it. However, using lean methods across a portfolio of Startups will mean to have a lower failure impact than using traditional methods. It helps to raise your probabilities for building successful products. As Ash Maurya states, 9 out of 10 startups fail. From the ones that succeed, 2/3 say that they have changed their strategy drastically. These averages will not change whether you use Lean Methodology or not, what would change is the money you waste developing your startup.

### **1.4. Features**

#### **1.4.1. When Lean Startup should be applied**

Lean Startup cannot always be applied. It is advisable to apply it when there is high uncertainty and low maturity.

For instance, Telefónica, pioneer in applying Lean Startup in a corporation, decided to implement Lean Startup only for cases in which the market must be validated. In other words, TEF decided to apply it when creating innovative solutions or when creating product's non-existent solutions (new solutions for niches with specific needs, for example). In both cases, the market has not been validated yet.

TEF applies **Product Life Cycle management (PLC)** for those cases in which there is already market knowledge and a validated business strategy. In these cases, new products are developed within the PLC framework<sup>5</sup>

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<sup>5</sup> <http://www.infoq.com/articles/innovation-lean-startup-telefonica>

Once the business model has been validated by means of the Lean Startup methodology, PLC is also used to continue with the new product development process.

#### 1.4.2. What makes Lean Startups outstand?

Lean Startup favours many factors over the traditional startups. In summary, we could say that:

Lean	Traditional
Experimentation	Elaborate Planning
Customer feedback	Intuition
Iterative design	Traditional “big design up front” development

*Table 0.1 Lean Startup vs Traditional Startups. Source: udacity.com*

Lean focuses more in experimentation than in elaborating the plan. Also, it supports collecting customer feedback than rather using intuition. In addition, it is mainly based in an iterative design, in contrast with the traditional way.

In detail, Blanck developed this comparative table showing the most important contrasts. It should be outlighted the fact that failure is expected in Lean Startup, whereas it appears as an exception in the traditional startups. The following table is clear to realise that Lean Startup has revolutionated the current business world. It could ignite a new entrepreneurial economy.



Lean	Traditional
<b>Strategy</b> Business Model Hypothesis-driven	Business Plan Implementation-driven
<b>New-Product Process</b> Customer Development Get out of the office and test hypotheses	Product Management Prepare offering for market following a linear, step-by-step plan
<b>Engineering</b> Agile Development Build the product iteratively and incrementally	Agile or Waterfall Development Build the product iteratively, or fully specify the product before building it
<b>Organization</b> Customer and Agile Development Teams Hire for learning, nimbleness, and speed	Departments by Function Hire for experience and ability to execute
<b>Financial Reporting</b> Metrics That Matter Customer acquisition cost, lifetime customer value, churn, virallness	Accounting Income statement, balance sheet, cash flow statement
<b>Failure</b> Expected Fix by iterating on ideas and pivoting away from ones that don't work	Exception Fix by firing executives
<b>Speed</b> Rapid Operates on good-enough data	Measured Operates on complete data

Table 0.2 Lean Startup Vs. Traditional management. Source: Blank, S., (2013). "Why the lean Startup Changes Everything"

#### 1.4.3. Tips to apply Lean Startup in a corporation

Telefónica summarised this tips after applying Lean Startup in their company. From their experience, they learned the following:

##### *Start small*

You will be able of both learning and minimizing waste. At the same time, it will give you confidence and experience when you need to extend it.

##### *Training and mentorship*

As it was mentioned before, Lean Startup is a different mindset, a different way of doing things. Thus, people need help and support to learn to work this way. Within possibilities, external and internal mentors are needed. However, the main thing is that these people not only know about what lean/lean startup means but also understand the context of your organisation.

### *Adapt it to your organisation and your context*

Adaption is essential and nobody knows better than you your organisation, your people and your culture. In consequence, nobody knows better than you how to make this work in your organisation.

However, to begin with, Telefónica began to use lean and learnt the following rules<sup>6</sup>:

1. Start small aim high: their projects always aspire to high targets but start with minimum resources.
2. Iterate fast to achieve efficiency in each of the maturation stages
3. Validate in the market from the very beginning
4. Fail fast, fail cheap and make sure you learn along the way
5. Encourage multidisciplinary teams
6. Rely on open innovation<sup>7</sup> to complement skills. TEF works with others to blend internal and external knowledge:
  - ✓ Collaboration with Startups
  - ✓ Solving global challenges with other industries
  - ✓ Complementing skills by strengthening them working with the best academic institutions (MIT, Columbia, Stanford, EPFL, Cambridge, UPC / UPM, Trento Territorial Mobile Lab)
7. Kill the project when it is not progressing. By killing a project that is not progressing, another project has the opportunity to be successful.

## **1.5. Methodology**

### **1.5.1. How Lean Startup works**

As Eric Ries affirms, Lean Startup is the combination of customer development and agile practices:

In consequence, Lean Startup is based in these principles. Thanks to those, it is possible to figure out most of the unknowns in a business in advance, before you can waste/lose money. They encourage failing fast and continuous learning.

<sup>6</sup> <http://fr.slideshare.net/InstitutLeanFrance/lean-elephants-lean-product-development-in-a-large-organization-by-susana-jurado> que incluye, en la penúltima slide lo de los tips: start small,... Es la última charla que he dado, la de París y por tanto la más actualizada

<sup>7</sup> **Open innovation** is a term coined by [Henry Chesbrough](#). The term refers to a new innovation strategy to improve internal innovation and expand the markets for external exploitation of innovation. Source: [https://en.wikipedia.org/wiki/Open\\_innovation](https://en.wikipedia.org/wiki/Open_innovation)

### Customer development

## CUSTOMER DEVELOPMENT + AGILE PRACTICES = LEAN

Customer development is a risk reduction methodology. It consists of a search phase and an execution phase. What Lean Startup calls up is the search phase: customer discovery and customer validation are new aspects.

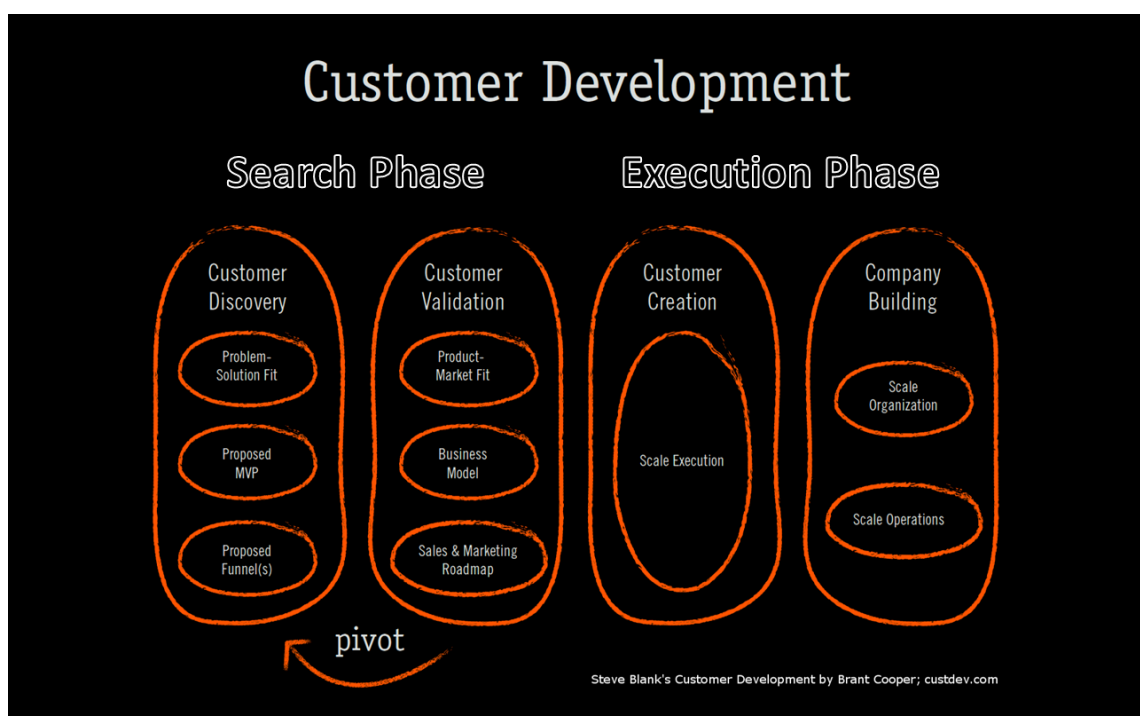


Image 0.1 Steve Blanks' Customer Development. Source: custdev.com

It has different phases:

Customer development phase	Objective
<b>Customer discovery</b>	Define the hypothesis of the model and validate both customer's problem and solution
<b>Customer validation</b>	Validate if I can sell the solution to a large volume of customers and therefore have a scalable model

<b>Customer creation</b>	Create demand and repeat the sales process to build the funnel
<b>Company building</b>	Build a functional organisational model, an operations plan and a financial plan

Table 0.3 Customer development phases. Source:

<http://fr.slideshare.net/InstitutLeanFrance/lean-elephants-lean-product-development-in-a-large-organization-by-susana-jurado>

While implementing the customer development phase, there are some key ideas you need to develop.

### GET OUT OF THE BUILDING

This refers to the customer development approach. Facts exist only outside the building, where customers live. Having face-to-face conversations is the only way to understand how you can create value for your customers. It is key to see the problems they have and what is the best solution for them, the solution they are expecting.

- ✓ *Talk with customers and stakeholders*

Customer feedback matters more than secrecy. It is important to focus on the problem test: avoid any discussion of your problem when testing it.

- ✓ *Use iterations and pivots<sup>8</sup>*

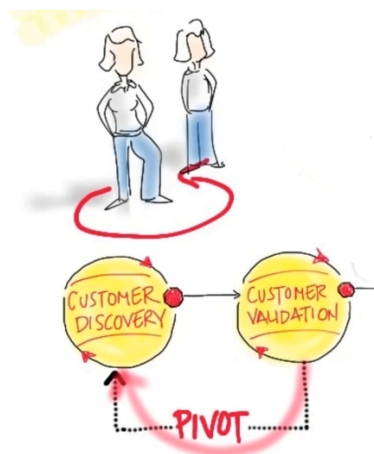


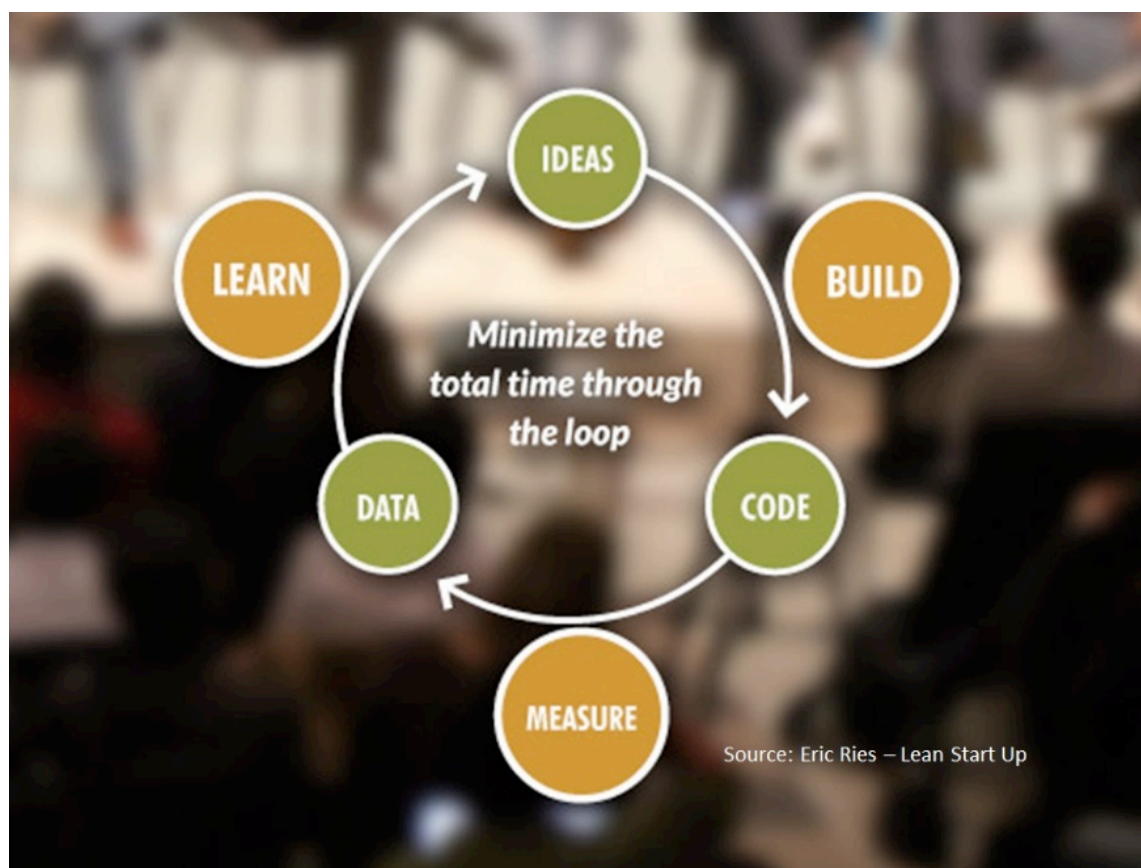
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Image 0.2 Steve Blank' representation. Source: Udacity.com

Pivot is a term used by Eric Ries to describe a change in direction of a startup, while staying grounded in learning. It is about finding a plan that works.

When your hypotheses are wrong, you pivot. However, do not think that pivoting means failure, not at all. Every time you pivot, you have learnt and each time you learn something you are getting closer to the right solution. In sum, you are avoiding wasting time and resources.

It is not until you have clear evidences that you can validate your hypothesis and are sure about what your customer's need/want. To achieve that, it is key to work on an iterative way, with the famous loop “build, measure, learn” of Eric Ries. The target is to minimize the total time through the loop. The following image shows the lean startup lifecycle, which centres in building incrementally.



*Image 0.3 Build, measure, learn loop. Source: Eric Ries. Lean Startup*

When you are building the solution you still have to have face to face conversations with customers to make sure what you are building is what they expect. It is important to have a

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<sup>8</sup> Small and substantive adjustments to ideas that are not working

continuous learning, and never stop learning and evolving what you have built.

### 1. EMPOWER YOUR PEOPLE

Autonomy, mastery and purpose is key to motivate your colleagues. The best ideas or necessities for improvement come from the people involved in their day to day work in a process, they are the ones that know it best. Therefore, empower your people to identify waste and suggest improvements.

### 2. EXPERIMENT

Experiment if you want to learn, that is, apply the scientific method. An experiment is a test under controlled conditions to investigate the validity of a hypothesis.

There are different techniques like the Minimum Viable Product (MVP). The MVP is not a small version of a product, process, etc. It is the fastest and cheapest way to validate a hypothesis of your solution. For instance, it can be something drawn in a napkin, a presentation, a mockup, etc. There are other techniques like Fake-0, Backend, Imposter, Judo, Analog / Physical, Dry-wallet, High Hurdle, Video Trailers.

#### *Business Model, inherent to the customer development*

The customer developments helps to validate the business model. It is a means, not an end. It is really important but inherent to the customer development: it is a tool within customer development. In fact, it is the target of the Lean Startup methodology.

Steve Blank defines the business model canvas as a static document where you define nine building blocks of your business in one page. Each component contains a series of hypotheses that you need to validate. It is the first thing an entrepreneur must do. It covers three aspects that create value for the company and for its clients:

1. Size of an opportunity
2. Problem to be solved
3. Solution the new venture will provide

There is not only one way to define your business model. In fact, Ash Maurya wagers for Lean Canvas, which is another way to summarize hypothesis. Lean Canvas also centers in working your hypothesis, and transforming good guesses into untested hypothesis.

In summary, as the Lean Startup Consultant Mario López de Ávila declares, it is key to write down hypothesis and to note that this hypothesis can be misrepresented. It does not matter whether you use business model canvas or logic or lean canvas, but write them down.

Here you can see a pattern of a business model canvas:

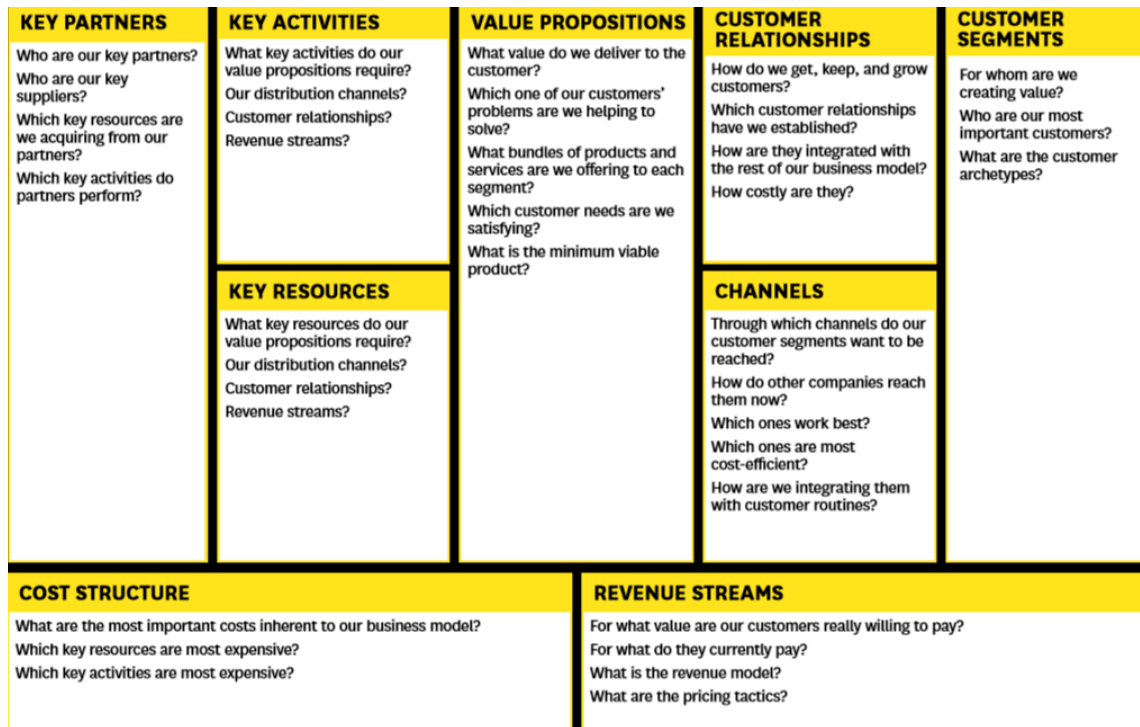


Image 0.4 Canvas developed by Alexander Osterwalder and Yves Pigneur Source:

[www.businessmodelgeneration.com/canvas](http://www.businessmodelgeneration.com/canvas).

### Agile development

It is hand in hand with customer development. Agile development develops the product incrementally and iteratively. It is normal that a startup will probably fail several times before finding the right solution. The goal of this principle is to find the minimum viable products of what they test.



## 2. Who we are: The team



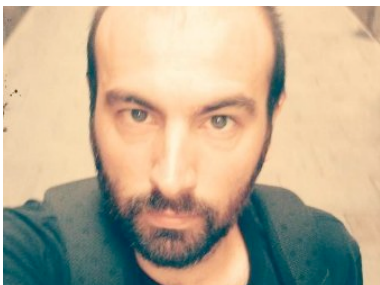
### **Ferran Adrià**

Ferran Adria has been called the world's greatest chef. Gourmet magazine referred to Adria as "the Salvador Dali of the kitchen". His restaurant, El Bulli, was recently named best restaurant in the world by the prestigious Restaurant magazine. Without a doubt, Ferran Adria will hold a prominent place in culinary history.



### **Pablo Rodríguez**

Pablo Rodriguez heads Product Innovation and Research at Telefonica. With over 15 years of experience, Pablo has worked in several Silicon Valley startups.



### **David López**

He is the CTO at El Bulli and nowadays he is in charge of the technological office at ElBulliFoundation. He studied at "Escuela de Hosteleria de Vilamalla". He holds a Master on "Comunity Manager and Social Media" and a "Master in ActionScript 3". He is from Port de la Selva, a small village in Cap de Creus Natural Park.



### **María José Tomé**

Hands-on experience in agile and lean practices. Expert in Lean Startup applied in big corporations. Leader of the relationship between Telefónica I+D and ElBulliFoundation. She has also led the launch of a technology challenge worldwide for Bullipedia: HackingBullipedia.



### **Pere Obradors**

He is currently at Telefonica Digital, in Barcelona, Spain. He's the Program Manager for Earlyand Open Innovation and the Open and Early Innovation Responsible at Telefónica Digital.



**Fernando Navarro**

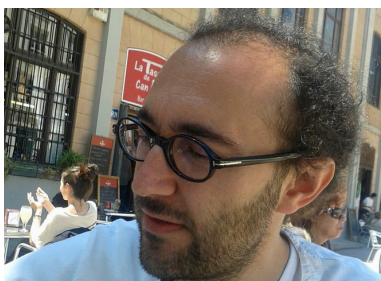
He is a technology expert and project management at Telefónica I+D. He has contributed in the creation of the project exhibition prototype and creative archive. He was in charge of the audiovisual content within this project in elBulliFoundation.

**Ramón Sangüesa**

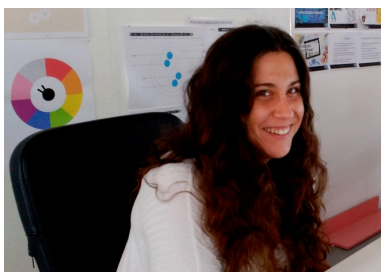
He is a coordinator in Hacking Bullipedia. He is a LSI department professor in UPC and is doing research in artificial intelligence. His present interests are mainly in the creation and study of innovation dynamics, collaboration, and the emergence of collaborative design networks. CoCreating Cultures is my most recent project working on innovation in culture.

**Tiago Simas**

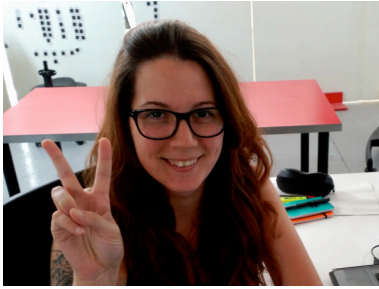
He is a researcher at Telefónica I+d and the University of Barcelona. He is focused on the Cuisine Food Networks and has applied it within El Bulli Foundation.

**Orestes Sánchez**

He started his contacts with elBulli during the first 10Fridays call. He had the opportunity to meet Ferran and David during those weeks, and I get surprised because of the methods they were using, so close to scientific reporting. On 2014 he became the leader at the Digital Food Lab.

**Adriana Fernández**

Developer working within Telefónica I+D and elBulliFoundation. Grau en Enginyeria de Sistemes Audiovisuals. Universitat Pompeu Fabra (UPF). IES Princep de Viana

**Luisa Sirvent**

She is the senior UX and UI visual designer of the project. She is been working in Telefónica and elBulliFoundation for 7 years. She has developed all the interface, interaction web, conceptual web, UX and branding design.

**Alicia Bosch**

Developer of this final degree project due to my stay as an intern at Telefónica I+D.

All these photographs have been obtained from Telefónica I+D database

